IMPROVING PROJECT PERFORMANCE ON CONSTRUCTION PROJECTS THROUGH STAKEHOLDER MANAGEMENT-AN ACTION RESEARCH INQUIRY

Thesis submitted in accordance with the requirements

of the University of Liverpool for the degree of

Doctor of Business Administration

by

Paul Akinnola

November 2020

ABSTRACT

This thesis examined how the performance of construction projects can be improved through stakeholder management in a construction organization. The research is important to reduce stakeholder non-compliances with the use of the organization integrated management system (IMS), enhance key performance indicators (KPIs) and ensure construction projects are executed in compliance with an improved IMS, to the benefit of the organization, while increasing profitability.

The research was undertaken using qualitative research methodology. Data was collected by conducting semi-structured interviews with eight experienced mid-level stakeholders that utilize the integrated management system and lead complex projects at four different research sites. The aim of the interviews was to gather insights, knowledge and understanding on the factors that impact the IMS processes and the strategies to adopt to improve project performances. Thematic analysis was used to identify and analyse the findings.

In three action cycles, the research revealed that mid-level stakeholder engagement under an integrated management system is highly critical and will be driven by the capital expenditure (CAPEX) on the project, the scope of the project and the complexity of the project. The research revealed that strategies to address non-compliances and fix existing IMS process gaps, include early engagement through proper stakeholder stewardship, effective communication and alignment among stakeholders, verification of stakeholders mandatory training, senior management timely review and signing of project documents and the implementation of an efficient governance and assurance system through audits to monitor project performances.

The research generated actionable knowledge and added value with the development of an improved authority and responsibility matrix (ARM) to hold stakeholder accountable for their tasks, the development of a risk matrix to capture unidentified risks early, the development of a construction planning flow process to match project risks with deliverables, and the development of a financial management tracking (FMT) system to effectively track cost variances and increase profitability.

DECLARATION

This thesis is the result of the author's original research. It has been written by the author and has not been previously submitted for examination which has led to the award of a degree.

TABLE OF CONTENT

LIST OF TABLES

LIST OF FIGURES

ACKNOWLEDGEMENTS

I am very grateful to the Almighty God through whom all things are made beautiful. His grace and loving kindness have helped me to complete this thesis. This has been a wonderful experience of a lifetime and to that I bless His name and return all the glory to Him.

I would like to acknowledge the outstanding supervision, mentorship, support and guidance I received from my thesis supervisor, Dr. Thomas Matheus. His candid reviews, patience, comments and feedback were instrumental to the success of this thesis. I would also like to say a big thank you to my second supervisor Dr. Cham Senaratne for his review and excellent feedback on the draft thesis.

My sincere appreciation also goes to Dr. Jonathan Westover of the University of Liverpool for his teachings and encouragement throughout my doctoral program. I would also like to extend my gratitude to my employer and the participants of this study for their support, contributions, insights, time and knowledge that helped me throughout this research study.

To my beautiful wife, Barrister Toyin Akinnola, LL.M., words cannot express my gratitude to you. You challenged me every day to think big, do big things, and accomplish great things. I am very grateful for the love, support and encouragement you have showed me throughout this doctoral program and for allowing me to spend quality time on this research work.

To my amazing children, David Akinnola, Eunice Akinnola and Michelle Akinnola, thank you for standing by me and for all your prayers and encouragement. I love you all. To my brothers and sister, Dele Akinnola, P.Eng., Wale Akinnola, MBA and Funmi Akinnola, thank you for your constant show of love, support and prayers that contributed to this great success.

DEDICATION

This thesis is dedicated to the memory of my late parents; Mr. and Mrs. Raphael Akinnola.

CHAPTER ONE
INTRODUCTION

1.1 Background of the Study

Construction problems can be very daunting, especially for large organizations. There are several interrelated issues that would have to be managed and resolved simultaneously to get projects to meet aligned goals and objectives. When they are being carried out under a management system that is either complicated or have certain degree of concerns to be adequately applied, or complied with, the organization suffers. Management systems must be functional and must address the issues project leaders face when executing projects. Leaders also have a responsibility to ensure there is compliance by the users. However, over the years, there have been behavioural non-compliances and gaps in our management system, because many of the processes within the system have not been adhered to, while some were complicated by gaps in the system itself (Fuller, 2009). This thesis aims to reduce stakeholder non-compliances with the use of the organization integrated management system (IMS), enhance key performance indicators (KPIs) and ensure construction projects are executed in compliance with an improved IMS, to the benefit of the organization, while increasing profitability.

The operations of multidisciplinary organizations like mine, require that our mid-level stakeholders consistently review our management system and its processes, remodel them where required and cut down obvious areas of non-compliances during project life cycles. Shrivastava (1987) argued that there are triggers that cause non-compliances to occur and it is only pertinent to get stakeholders to work through them collectively to address the situation. For example, in one of my recent, complicated large projects, a gap in the process during the mobilization of a major field equipment to site resulted in the project safety officer finding issues with the operation of the equipment on site.

Our management system addresses this type of mobilization, and the efficient operation of equipment on a job site, but makes no provisions for the specific minimum conditions of operation on such equipment during actual construction work or when not in operations on construction site. In other

instances, some personnel who do not fully have a clear understanding of the established processes often end up with several non-compliances that could have caused adverse impacts to our business operations and affect the repeated work with our clients. These issues need to be addressed. When leading organizations with significant reputations face such issues, the aftermath is the continuous weakening of client confidence level and an erosion of the full capacity of the performance of established processes. With these and many issues relating to a lack of thorough use, application, and understanding of the existing management system processes, this study aims to provide a framework through which improved IMS processes could be implemented.

1.2 Company Background and the Role of the Researcher in the Organization

My organization was founded in 1960 and has become one of the world's largest and leading engineering, construction and project management organization. My organization began with a focus on soil engineering and has over the past 60 years of operations expanded operations into a wide range of sectors including government, industrial, water, transportation, marine, minerals and metals and construction. My organization places a strong emphasis on client relationships and understanding the key drivers behind our client needs. This approach is the fundamental strategy we use to support our clients and achieve both short and long-term social, economic and environmental objectives.

My organization has more than 7500 scientists, engineers, project managers, operation managers, construction managers and other specialists located worldwide in more than 150 offices and over 40 different countries. With more than 3000 staffs across North America, my organization offers an impressive depth and breadth of capabilities. My organization has grown to be the most respected and trusted company providing services in major key sectors of consulting, design and construction services. In Canada, my organization employs more than 1000 consulting and construction permanent staff located in 10 provinces with expertise in energy, utilities, construction, transportation and marine. This long history of more than 60 years in operations has allowed my organization to play a major role in the construction industry, with our construction projects staffed with personnel, that have experience and capabilities to handle the most complicated construction projects. Our in-house

construction business unit which I belong provides specialized contracting, construction management and design build solutions for ground engineering, environmental remediation, mine closure, waste management, marine construction, dam and reservoir facilities and other resource projects. Since 1997, our construction business unit has developed a dedicated team of highly motivated, trained and experienced staff and provides integrated design and construction services specializing in several turnkey delivery of technically challenging projects across a wide range of markets.

As a senior manager, construction projects in the construction business unit, I am responsible for managing the project team and leading complex projects from proposal stage to completion, including allocation of budgets, personnel and resources to meet project objectives; preparing and reviewing proposals; and ensuring alignment with standards and operating procedures. I have a responsibility for maintaining and developing client relations while building collaborative stakeholders' relationships. I am also responsible for motivating and influencing various levels of technical experts toward the completion of large mining, infrastructure and energy projects and managing project portfolios with budgets ranging from a $1M to $5M. I am also responsible for managing changes related to scope, budget and project schedule and actively communicating with integrated project team to deliver the best outcomes on these projects.

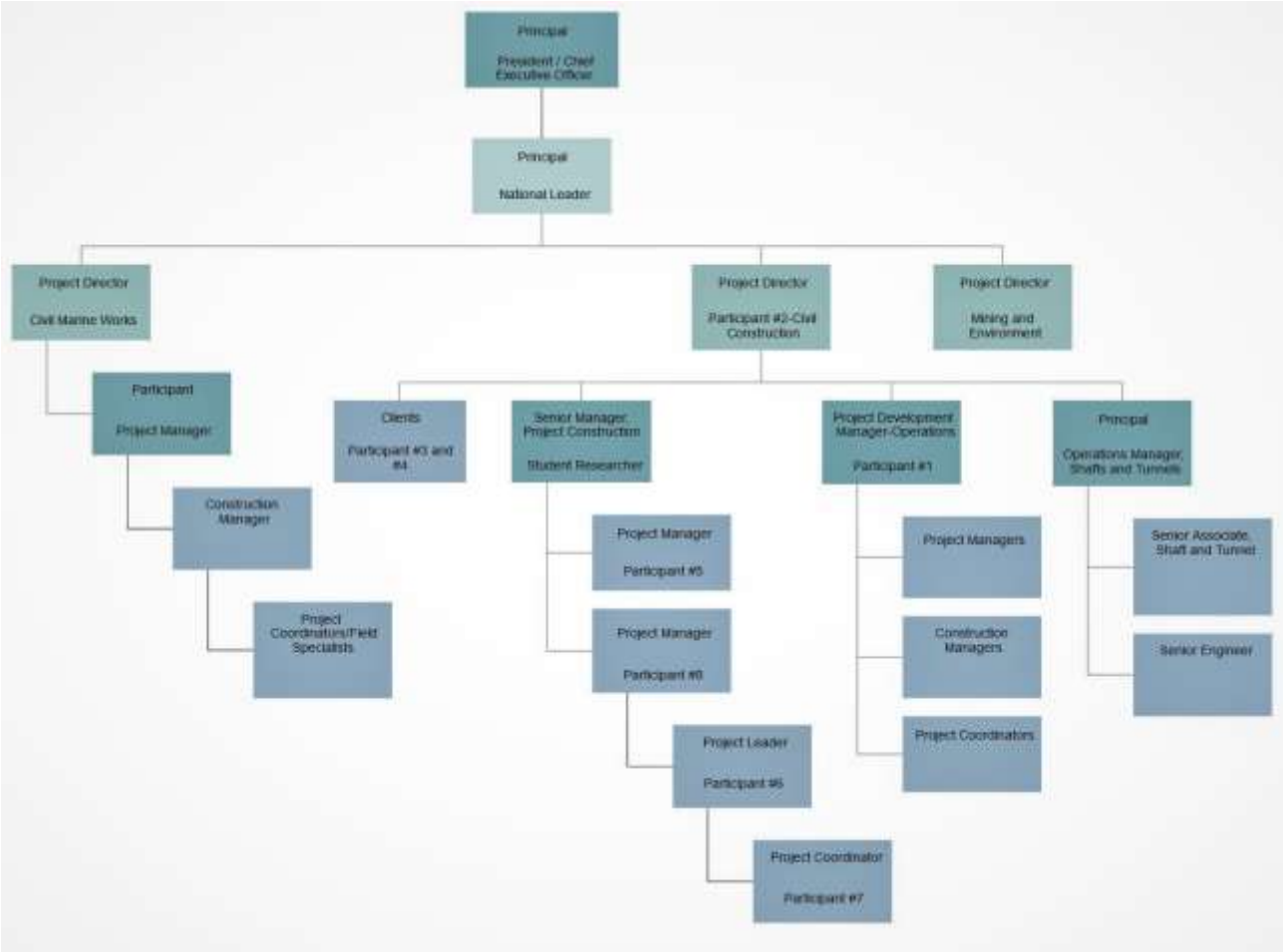

Figure 1: Organizational Chart

1.2.1 Organization Management Structure

As an engineering and construction organization, my company provides services in the areas of ground engineering, mining operations, environmental remediations and construction operations. Figure 1 above presents the organizational chart for the construction operations division, where I belong. The division is headed by a national leader who oversees the entire construction operations. The national leader reports administratively to the chief executive officer (CEO) on national operational matters and works very closely with the vice president for the region on regional matters. The national leader has 3 project directors (PD) that oversees each business unit of the construction operations division; these are PD for civil marine works, PD for civil construction works and PD for marine and environment. As a senior manager, construction projects within the division, I report administratively to the project director as shown in Figure 1. I also have a number of project

managers, project coordinators and construction managers that are my direct reports and others that are my dotted line reports but report administratively to another manager.

First, what do I mean by stakeholders and how critical are they to the performance outputs of the projects I execute? Stakeholders are critical individuals to the successful delivery of any project, program or activity. The Project Management Institute (PMI) defines stakeholders:

"as an individual, group, or organization who may affect, be affected by, or perceived itself to be affected by a decision, activity or outcome of a project. Stakeholders may be actively involved in the project or have interests that may be positively or negatively affected by the performance or completion of the project" (PMI, 2013, p.30).

In conducting this research study, I have chosen to limit the study to mid-level stakeholders since the information required can only be comprehensively provided by those who have direct knowledge and who provide oversight of the selected active projects (Mitchell et al., 2017 pp. 854). These authors, classified stakeholders in terms of three attributes: "power to influence the firm, legitimacy of the stakeholder's relationship with the firm, and the urgency of the stakeholder's claim on the firm". The primary responsibility proposed by these authors falls strictly on our mid-level stakeholders all represented as subordinates under the national leader level as shown in Figure 1.

These stakeholders include, but are not limited to, the project director (who provides senior oversight for our projects and is accountable for the overall project delivery), the project manager (who oversees the development and execution of our projects), the construction manager (who oversees the field execution of our projects), the project coordinator (who monitors the project cost and schedule and its alliance to project objectives, under the direction of our project managers). i.e. (the PDs, PMs, CMs, PCs). The schematic representation of the corporate system framework is shown in Figure 2 below, providing an overview of the organization corporate system procedures; the corporate governing structures, procedures and forms used by each operating local, regional, and global offices. The IMS processes which controls the business operations and the way it operates, falls under the GP1 and the GP2 portfolios.

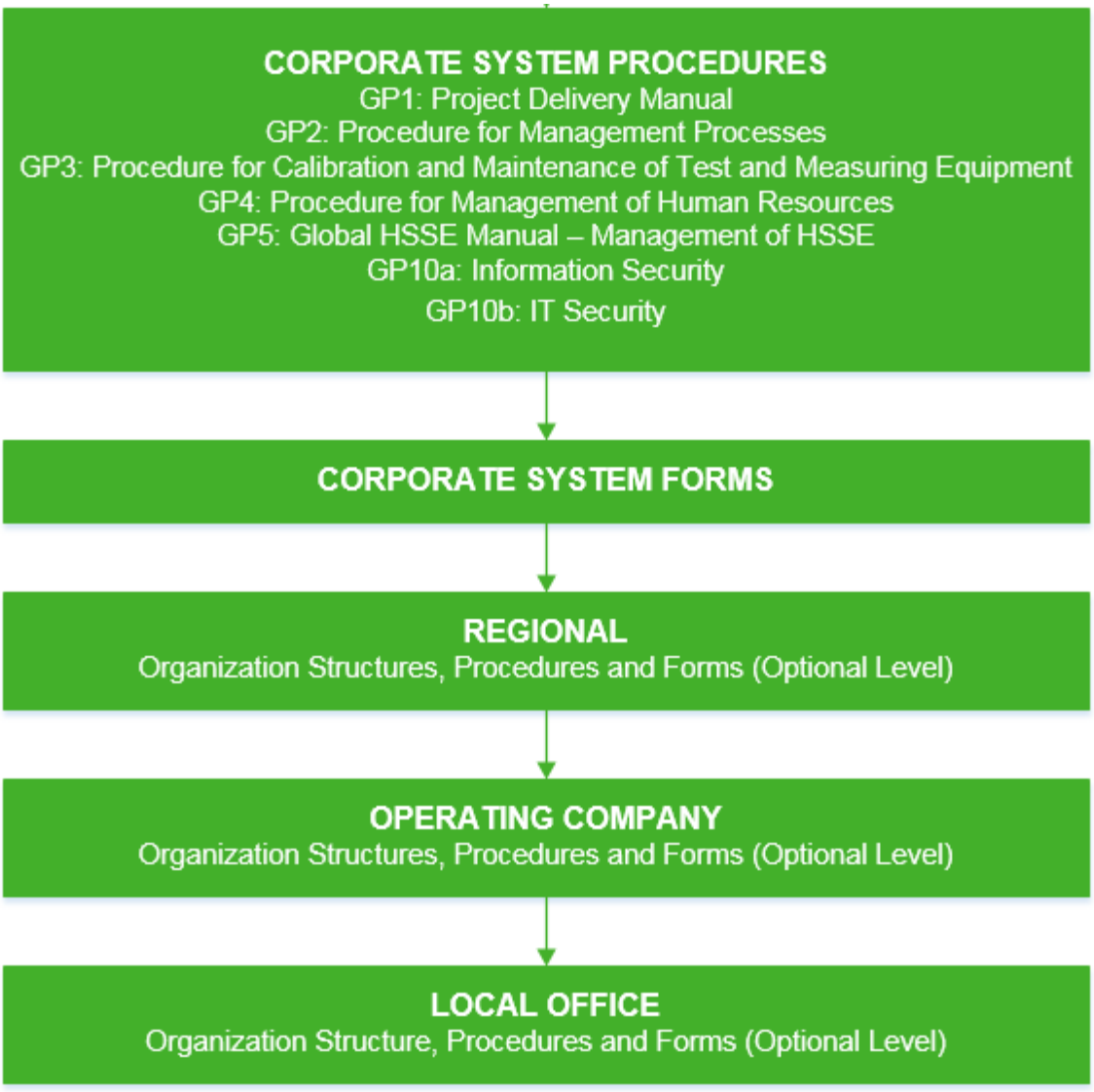

Figure 2: Schematic Representation of the Corporate System Framework

1.3 Researcher's Background and Experiences

I am a Professional Engineer and a senior manager, construction projects managing a team of 20 professionals overseeing large complex projects. I hold a First-Class bachelor's degree in Civil Engineering from the University of Ibadan, Nigeria and a First-Class master's degree in Civil Engineering from the University of Windsor, Canada.

In 2011, I became a Fellow of the American Academy of Project Management and in 2015, I completed the Executive Management Program at the Schulich School of Business, York University, Canada. In the last 20 years of my career, I have managed pre-feasibility studies, feasibility studies, engineering, procurement and construction of several large multidisciplinary projects in North

America and effectively stewarded them to senior management executives in large multinational corporations. I was responsible for overseeing the development and execution of many of these projects from inception through optimization to project closeout. I was also responsible for ensuring these projects are delivered safely, on time and on budget.

1.4 Statement of the Problem

My organization construction business unit is a major business unit and one out of the three main business units within the organization. Others include, the consulting business unit (comprises of several interdependent engineering services units) and the North American mining unit each with its own organizational responsibility. Our construction business unit has a responsibility to uphold the highest quality and safety standards during project delivery and is committed to understanding our client needs while providing solutions that are technically appropriate, socially responsible and compliant with contractual and regulatory requirements.

To meet these objectives, my organization has developed a comprehensive and rigorous quality assurance/quality control, construction management and project management program to support our commitment to maximizing our profits and creating value for our clients. This is called the integrated management system (IMS). Our IMS is the fundamental protocol that defines our policies and objectives, the responsibilities of management and the processes that control the way in which we conduct our business. This IMS system and its processes help us manage and regulate our construction projects, their developments, monitoring and executions, invoicing process, progress reporting and guide us in the way our construction business unit manages stakeholder and client relations and communications. The IMS was formulated to effectively manage and address project issues and complications, reduce risks, improve quality processes and manage costs effectively, in order to grow our gross revenues (top line) and influence our operating income (bottom line), also known as EBITDA; earnings before interests, taxes, depreciations and amortizations.

The IMS therefore is a major framework that plays a critical role in the management of our projects. The whole essence is to ensure that its processes are followed and utilized by our stakeholders and

that the stakeholders are in compliance in using them during all project phases, including the front-end engineering phase (FEED), detailed design phase and the construction execution phases of our projects. It helps streamline our business systems and allow our integrated project team to be committed to proactively meeting tight construction deadlines and delivering project that meets the expectations of our client and key stakeholders. Overall, the IMS allows a coordinated approach to our project planning, scheduling, budgeting, risk management, communication techniques and prevents the omission of important issues that could impact our construction project performance.

Over the years, the construction audit reports from our IMS team have shown there had been significant gaps and behavioural non-compliances in our critical business processes that has affected our construction project performance. Our construction project performance is measured in terms of the capabilities of our projects to meet set key performance indicators (KPIs) of "below budget, ahead of schedule, quality and safety requirements" while increasing our business unit profitability targets (i.e. achieving a minimum of 15% profits revenue generation, otherwise known as EBITDA; earnings before interest, taxes and depreciation).

The audits completed by our IMS team in November 2017; the team that evaluates the implementation and conducts our IMS audit reviews, revealed that there were noticeable gaps in our IMS processes with a number of the issues relating to non-compliances by the users of the system during the development and execution of our projects (i.e. the mid-level stakeholders). Approximately 500 of 750 completed audits (66%) revealed that a number of these issues are attributed to non-compliances and the remainder 250 cases (34%) were the result of process gaps generated from the system itself. And over the past three years, these issues have impacted our technical excellence, client satisfaction, risk management and the health, safety and environmental performance of our projects. Figure 3 showed the IMS representation report depicting the percentage impacts of this work-based problem.

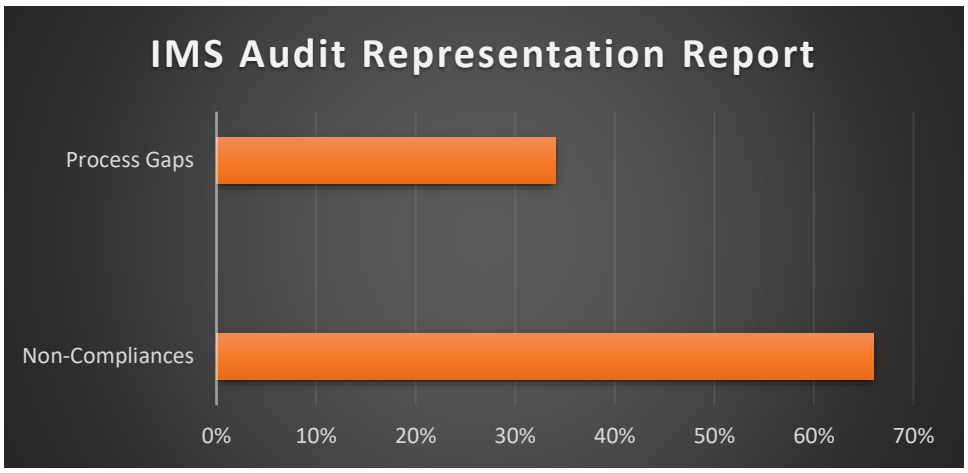

Figure 3: Integrated Management System Audit Representation Report

The issue in focus in this research study therefore are the gaps in the IMS processes and the non-compliances (behaviour) by the users of the system that has impacted the performance of our projects over the past few years. Compliance with these processes would require that stakeholders are able to complete and obtain appropriate approvals before taking on a new project, be able to set projects up in the system and comply with the health safety and environmental requirements for our construction projects; identify the Health, Safety, Security and Environment (HSSE) requirements on projects, manage these HSSE issues and properly communicate them to the team.

1.4.1 Rational for using Stakeholder Management Concepts for the Study

Stakeholders are key individuals who have vested interest in our projects and its performance. They also include those individuals or group of individuals that could be impacted or likely to be impacted by the outcomes of the projects being executed (PMI, 2013). My study has focused primarily on mid-level stakeholders, who are the primary users of the IMS system and its governing processes and who have the most tendency to generate and influence the largest profit margin my company realizes. Our mid-level stakeholders have an important role to provide oversight on the development and execution of our construction projects. These mid-level stakeholders are those stakeholders that are neither top management of the organization nor junior management of the organization, but have significant responsibility to oversee our projects, interphase with client, manage project issues and steward on budget, schedule, safety and quality requirements of the projects to top-level management who lead

at the strategic level. They are also key individuals that support the formulation of our annual business plans; govern the way we conduct our businesses and manage the risks embedded in our IMS processes.

The concept of stakeholder management is essential to support this research study as it will help to identify these mid-level stakeholders, their needs, and engage them in discussions to support the successful execution of our projects while building effective relationship to identify, analyze, plan and remedy the work-based problem being researched (i.e. the stakeholder engagement phase). The concept of stakeholder management is an integrated and a systemic approach to addressing similar management issues (Jepsen and Eskerod, 2013). The key component of the stakeholder management phase of this research work would entail, first identifying the make up of these mid-level stakeholders, who they are and what roles do they serve? then work with them to develop strategies that will improve the performance of our projects and our overall IMS processes.

While stakeholder management is the proposed approach being undertaken with this study, it did not focus on top-level stakeholder management because those categories of stakeholders are not involved in the direct execution, planning or monitoring of our project work. Our top-level management are the company presidents, vice presidents and regional directors of our organization. While, on the contrary, the mid-level stakeholders which I belong are the critical participants of this study and worked with me as the primary researcher in the action planning, action taking, evaluating phase and the knowledge generation phase. At the end of this study, the actionable knowledge entailed putting back to immediate use the knowledge generated from this action research cyclic processes. The stakeholder management approach helped me as the researcher to document the stakeholders needs and their details, in terms of their names, their roles and responsibilities and the active projects they manage within the organization. That process of documentation of the stakeholders was critical for me in order to develop a robust stakeholder register, that would be useful to me, as the researcher in the data collection and analysis phase of this study.

This approach allowed me as the researcher to manage the key expectations of the mid-level stakeholders in the usage and administration of our IMS processes, their influences and the stakeholders power to address non-compliances in the performance of their work. The ability to identify these stakeholder expectations helped me to carefully analyze this work-based problem and provided me with a path forward to addressing them. This part of the process required engaging these stakeholders to keep them informed of what steps are being proposed, how they are being proposed and why they are being proposed, to improve the performance of our construction projects. This is otherwise known as stakeholder engagement.

Stakeholder engagement is the primary goal of stakeholder management, and its aim is to engage each of the mid-level stakeholders in a manner that benefited the performance of our construction projects (Warner, 2019). As stakeholder management is an iterative process, I made sure, there is constant reviews, follow ups, discussions with the selected stakeholders while ensuring that the process continues throughout the life cycle of the study. This phase of the work required adequately monitoring the progress and performance of selected projects, documenting, analyzing, planning, implementing, engaging and monitoring project activities with the stakeholders over the life cycle of the active projects until the project reaches its completion phase.

In many management literatures, stakeholder engagement is considered a crucial approach to improving business practices (Mitchell et al., 2020). The concept of stakeholder engagement is also seen by many managers as a practical approach to anticipate and resolve many ethical challenges that stakeholders face in the course of managing their business (Cennamo et al., 2012). While the idea of engaging stakeholders to resolve these challenges is quite appealing to many managers, some researchers have however argued that if mid-level managers must address these challenges, it must first address the knowledge-based problems; risk, ambiguity, complexity, equivocality and uncertainty, that underlie these challenges through stakeholder engagement. The construction industry is no exception to these knowledge-based problems and is in fact saddled with addressing

these five knowledge-based problems on a regular basis using stakeholder-led relationships and participations (Gareis et al., 2013).

In essence, while stakeholder engagement will produce a relationship through which participants can make contributions in the work they do (Sillanpaa, 1998), they can only do this effectively, if they know and address the obstacles that their relationships bring, (Townsend et al., 2018). Doing so, will generate new knowledge and build a foundation that would create and defuse trust within the organization in a positive manner (Greenwood, 2007). It will also create value for the organization and for all those involved (Bosse and Coughlan, 2016).

Arguably, when stakeholders engage together, they foster an environment where common ethical grounds can be established (Maak, 2007), where substantive influences can be generated (Greenwood, 2007) and where economic performances can be assured (Barnett and Salomon, 2006). These among many others as would be seen in the course of this research study, are the merits of introducing and integrating stakeholder engagement into the study.

Figure 4 below has presented the processes and methods proposed by Warner (2019) on how the stakeholder management framework operates. It discusses the four main sequential processes that are required to manage and oversee stakeholders' requirements in the execution of a project. This includes first identifying the stakeholders and establishing who they are. Then creating a stakeholder register where their locations within the organization are clarified and documented. The concerns and expectations of these stakeholders would then be developed through a rigorous analysis where their needs are classified, while building ongoing stakeholder relationship during the planning and engagement phases. This is to make sure stakeholder expectations are met.

Establishing a mechanism in which stakeholder engagements can be monitored and evaluated on a regular basis will enhance project performance, increase profitability and enhance client satisfaction. The cyclic process shown in Figure 4 presents the methods and tactics that should be applied for each process category (Warner, 2019).

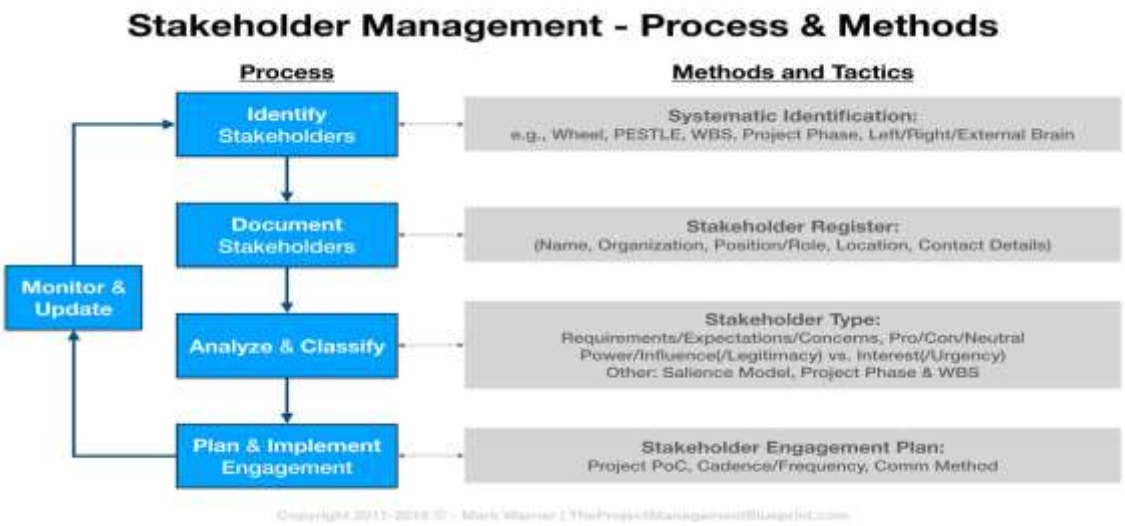

Figure 4: Stakeholder Management-Processes and Methods (Adapted from Warner, 2019)

1.4.2 Rational for using Portfolio Management Concepts for the Study

Portfolio management is the art and science of selecting and overseeing a group of project investments to support the strategic objective of the organization (Meding et al., 2013). The objective of portfolio management is to ensure that the collective selection of projects was deemed suitable to meet the organization risk tolerance level and to fulfill its long-term strategic goal. According to Rajegopal (2013), if the organization must maximize its benefits, it must be able to allocate its resources in such a way as to realize the corporate objectives of its business. Portfolio management was helpful in this regard as it helped to determine which projects aligned with the IMS processes that must be pursued in order to get the best returns for the organization.

When projects selected have not been reviewed and approved by our project review committee (PRC), they are not permitted to go into development nor field execution. The PRC represents the leadership team that reviews and approves project to proceed or not to proceed when they fall within a certain threshold and when there is a high degree of possibility that such projects would not be compatible with the processes. For example, some projects within my construction business unit have been observed to show evidence of non compliances to subcontractor selections and a lack of a properly formulated health, safety and environmental plan, a lack of a preliminary site assessment and a lack of proper sign offs at start and at the end of project completion. These are significant gaps that has

caused significant losses (lower than the expected 15% minimum requirements) in terms of our profitability for the construction business unit and has affected the performance of our projects. Some of these projects may not have been assessed in terms of its risk levels, and the significant number of resources that these kinds of project utilize of the organization resources may have contributed immensely to the profitability outcomes. When such projects have not been carefully evaluated, the principles of portfolio management revealed that there is a high tendency that these projects may not have complied with our IMS processes that are built to regulate such scenarios (Stewart et al., 2018). There is therefore a high likelihood that these kinds of projects managed by a number of mid-level stakeholders would ultimately fail to deliver the expectations of the client and lead the organization into significant losses.

Portfolio management is a strategic approach put in place to identify these losses and develop a holistic way to proceeding with only construction project opportunities that are likely to pose minimal business risks to our overall project and corporate objectives. Our mid-level stakeholders play a vital role in helping to select and identify such low-risk projects that fall into this category and these stakeholders have a primary goal of reducing these risks, that may arise during the development and execution of multiple projects with varying complexities and interdependencies.

Portfolio management approach would help maintain adherence to the appropriate work processes, tasks, establish controls and methods that will enhance proper action taking during the selection phase through front end development phase, which includes the proposal development phase, planning phase up to the project execution and closure phase. However, the success of portfolio management would depend largely on the requirements of the projects selected and approved within the portfolio framework and how those may influence the organization's strategy (Franken et al., 2009). When portfolio management has not considered all project requirements such as the totality of the client needs and expectations, organizational strategies, risk issues, financial obligations, project efficiencies, cost, time, and stakeholder engagement, there is a high likelihood that portfolio

management can become a hindrance rather than a benefit to improving construction project performances (Nelson, 2005).

In driving optimal organizational value and enhancing project performances, the selections, approvals and oversight activities for construction projects must be robust enough to satisfy the organization strategic objectives. In essence, whatever criteria our pricing review committee (PRC) adopt from the outset of evaluation phase, must consider balancing the resources of the project, the needs of the projects with that of the organization business strategy, in a way that maximizes the likelihood of project success. Portfolio management can support this objective, if the framework is driven by strong organizational strategies, robust project objectives and strong management oversight (Craddock et al., 2015).

1.4.3 Overview of the Integrated Management System and its Processes

Every year, our construction business unit manages high risk projects and my organization classifies these projects in terms of complexities that ranges from 1 (low complexity) to 5 (high complexity). My organization also designate the level of experience of each mid-level stakeholders that oversee the development and execution of these projects from a range of 1 to 5. The higher complexity projects require the highest level of planning, management and control. Projects are classified at the outset of project delivery during the initiation stage so that the appropriate level of efforts in subsequent stages is recognized and provided.

Our project delivery processes under our IMS must be complied with in order to meet the most benefit for our projects. The IMS processes are what our mid-level stakeholders use to govern the way we execute our projects and is the fundamental protocol that governs the decisions they take, the subcontractors they select, the deliverables they develop and the risk, health and quality management they use to deliver the intended project to the client.

Observable gaps in the use of our IMS processes and the non-compliances by the stakeholders, as shown in the audit processes completed in November, 2017, revealed that 66% are driven by the non-

compliances of the users and 34% by gaps in the IMS processes. These non-compliances and the gaps in the system continue to expose our organization to significant risks and increase the likelihood of poor project performance. This is largely so, because the output and the performance of some of our key projects have fallen short of the expectations of our most highly valued clients and may have affected some of our repeat business. While, our project delivery framework requires that client needs must be properly understood and clearly documented, a gap in our IMS processes and the non-compliances of the mid-level stakeholder has long contributed to this growing concern. Some of these gaps and non-compliances as identified by the Audit team is shown in Table 1 below. These account for about 66% non-compliances and 34% attributed to the gaps in the system processes, as shown in Table 1 below. (Barnett, 2006), (Freeman, 2016) and (Lunts, 2012).

List of Non-Compliances	**IMS Expectations**
Working without a signed contract	All contracts need to be signed. Task orders under an existing master service agreement must be signed by both parties
Subcontractors working without a signed task order	All contracts must be signed and those under an existing task orders must also be signed by both parties and documented
Project without a Health, Safety and Environmental Plan (HaSEP) and in some cases a Health, Safety, Security and Environmental Plan (HSSE)	An HaSEP must be prepared for medium risk project while an HSSE must be signed by the Project Manager or other designated senior staff with appropriate health and safety skills and experience

Change Orders not authorized	Scope of work must be agreed to, change orders discussed and agreed to. It must be internally reviewed and approved and authorized by the client
Non-approved Subcontractors	Only approved subcontractors and subconsultants documented in the subcontractor database may be used for all project sites
Documents not reviewed before sending to client	All deliverables sent to the client must be appropriately reviewed including draft and final versions of reports, memos, models, databases, design drawings and presentations
Electronic signatures without documented approval	Appropriate documentations such as written email to be attached to all supporting electronic signatures. This has to be included in all correspondences and reports submitted electronically

Table 1: Behavioural non-compliances identified from the 2017 IMS Report

1.4.4 IMS Process Implementations

Studies from literature showed that an IMS, as an integrative system, should contain integrated requirements that would help drive the quality of its management process including those that would address safety, environmental and occupational health management processes (Genaro and Loureiro, 2015). Gianni and Gotzamani (2015) also argued that an IMS should in practicality have all the standard requirements that all business stakeholders can adopt for their work. If this is so true in light of the argument of these scholars, one can argue that an isolated management system; a system that has none of its processes non-integrated, is not ideal as it would only tend to address individual key

management processes, and would not integrate the organizational processes together to satisfy the stakeholders needs, address noticeable gaps and reduce behavioral non-compliance in an organization (Asif et al., 2010).

Organizations therefore need a robust system that not only provide a means to engage and capture the stakeholders' requirements but one that manages in an integrative manner, the behaviour of their stakeholders to meet the requirements of its processes. Taylor et al. (2019) also discussed this idea and related it to the need for stakeholders under a management system to work together if they must identify those commonalities needed to improve project performance. For an IMS processes therefore to meet its key objectives and serve the strategic need of the organization, there has to be a clear representation of what those commonalities are and how they can be well integrated and complied with.

The Venn diagram in Figure 5 below showed these commonalities, how they must be met and the synergies that would be created when there is a combination of stakeholder management, stakeholder engagement and portfolio management (Bourne, 2009). This support the argument by Morikawa and Morrison (2004), that an IMS process is one that can be translated by selected stakeholders with aligned interests and with close collaborative relationships (Freeman, 2010). Figure 5 showed how project performance can be improved while working, identifying and prioritizing stakeholders needs, developing strategic plans, correcting behavioural non-compliances, closing process gaps, setting visions, and making rules under different circular representations, in order to meet the research objectives (Beringer et al., 2012).

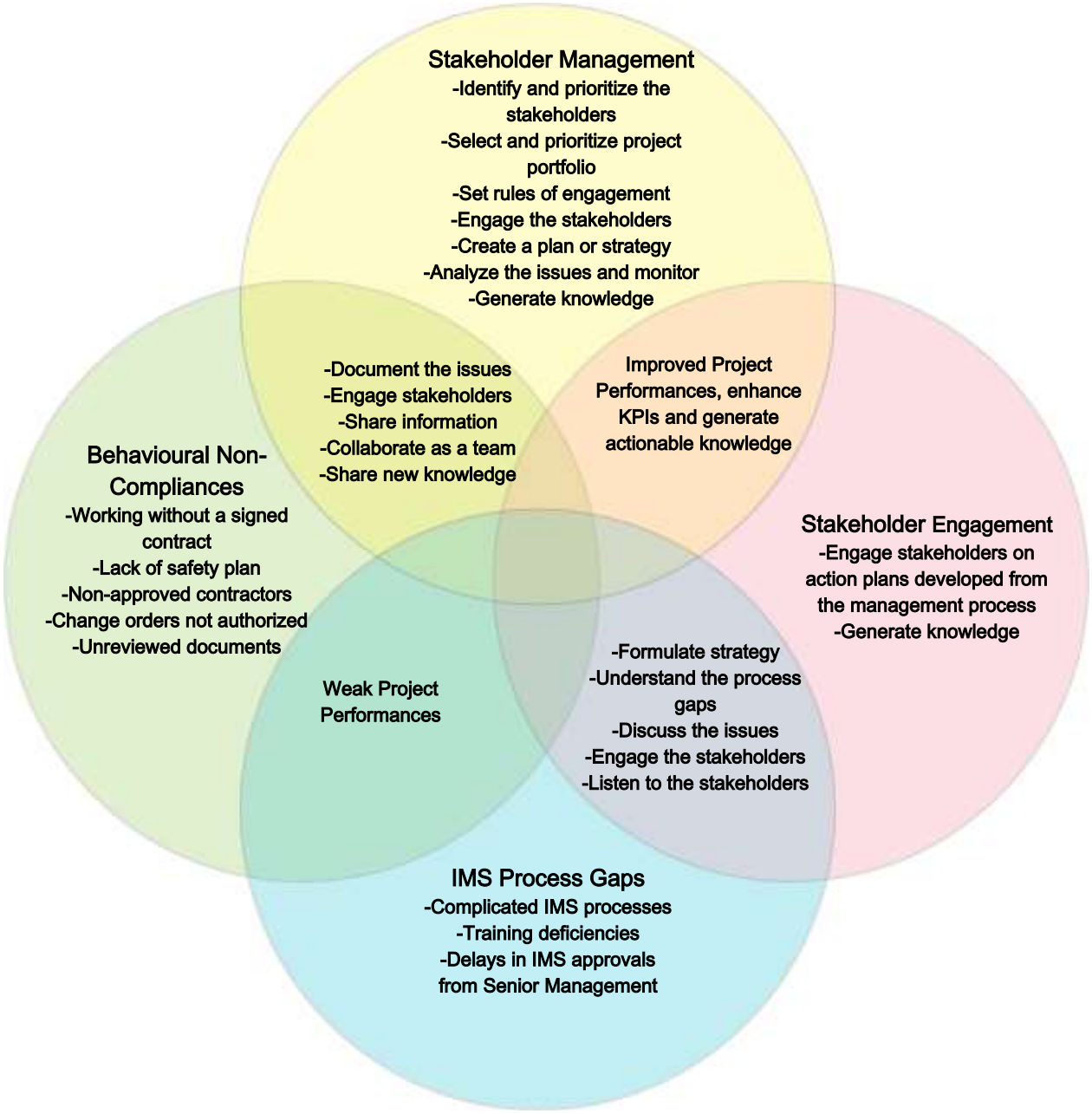

Figure 5: Venn Diagram Representation

1.5 Research Questions

The following questions supported my research framework:

1. What factors influence stakeholder engagement during project development and execution and how can these stakeholder engagements be enhanced to improve project performance?

This research question intends to understand the critical drivers of stakeholder engagement in the execution of projects. These drivers would ultimately influence the performance of our construction

projects (Payne and Calton, 2002). As many projects' performances are influenced by their engagement level during evaluation, development, optimization and execution, this question would determine the frequency of engagements and the approaches to adopt to enhance the performance of our construction projects. In essence, the intent is to identify and apply these factors and evaluate how they shape stakeholder engagement, drive project performance, improve profitability and enhance client satisfactions.

Stakeholder engagements are influenced by a number of factors and understanding those factors in-depth is critical to project results. These factors are understanding the project complexities, the stakeholder authority level, the project capital estimate, the project constraints and the decision-making process of the stakeholders during the life cycle of the construction projects. Early identification of these factors was critical to allow for proper planning of current and future construction projects and improve overall project outcomes.

2. What management strategies should be employed by mid-level stakeholders to address non-compliance issues and fix reoccurring gaps in our IMS processes?

Strategies in this context of my research are the action plans that need to be put in place to support the successful execution of the construction operations work (Gibson et al., 2006). One of the critical research questions is to understand the strategies that the selected mid-level stakeholders can adopt to address non-compliances and the process gaps that will influence the performance of our projects.

An evaluation of the engagement strategies by stakeholders would provide more insights into these areas of non-compliances and process gaps that are present in our IMS as reported from the audit findings shown in Table 1. It is therefore critical that robust strategies must be employed to bring our organization compliance objectives into fruition. This would entail conducting stewardship meetings regarding the current issues and evaluating how the primary stakeholders address and tackle these challenges under the various approved management strategies. These strategies would serve as a road map towards achieving full compliance and will be reviewed with senior and operational leaders

within the organization for alignment purposes. The goal will be, to create a paradigm shift in the organization and help the business unit improve the overall construction project performance (Huber and Scharioth, 2006).

3. How can the proposed action plans identified by the stakeholders be implemented to improve key performance indicators (KPIs) on construction projects?

The concept behind this question is to understand how KPIs can be improved. In other words, what steps would be required to reduce project cost overruns and profit losses, optimize schedule and improve the safety and quality of our construction projects, using the strategies proposed from research question 2.

It is important to understand how these strategies would be implemented without jeopardizing the ultimate goal of improving project performance and increasing profitability. That understanding would require monitoring project cost variances and financial performance using established matrices and financial management tools under our IMS processes and refining them to such an extent that will improve the key performance indicators (KPIs) on our construction projects.

The implementations of these actions are important to help the construction business unit have a collective way to managing future projects while building a business unit that consistently maximize profits and satisfies client expectations with both project and operational excellence. When our key performance indicators are met or exceeded, its a strong indication to our clients that we have implemented robust plans under our IMS framework that is capable of meeting their needs with the least amount of challenges and risks. This will make us feasible as an organization, prove that we are meeting our business and client expectations and enhance a repeat business. It will also prove that our integrated management processes work and the business and technical expertise we offer as an organization is valued and will contribute positively to improving KPIs on our construction projects (Mansell and Philbin, 2020).

1.6 Objectives of Study

The objectives of my study are in three main folds:

1. To develop action plans that would reduce mid-level stakeholder non-compliances with the use of the organization integrated management system (IMS).
2. To evaluate how the action plans would enhance key performance indicators and improve construction project performances.
3. To generate actionable knowledge in which construction projects are executed in compliance with an improved integrated management system to the benefit of the organization, while increasing profitability (Tenkasi and Hay, 2004).

1.7 Significance of the Study

This study was based on the precepts that my organization will be able to address the prevailing gaps and non-compliances observed in our management system that have impacted our operating income for the last few years. This operating income drives the success of our organization and ensures sustainability of our business operations. That understanding drove the rigour that goes into this research. While we have over the years shown a significant surge in our gross income on the projects we execute, the expenses, costs, and expenditures have also grown to an astronomically high level and have impacted our operating income in the past years. Therefore, there is the need to take actions to address and solve these complex issues (Morrell, 2008).

As an organization led by senior operation leaders and coordinated on many occasions by mid-level stakeholders such as project directors, project managers and construction managers, these are ongoing issues that impact our project management process. The frequent issues are delays in receiving construction reports, which has consistently impacted the ways projects are reported and closed, the procurement gaps that undermine our supply chain process and the constraints in understanding how best our subcontractor management system works. Others include behavioural non-compliances in dealing with field issues, especially as it pertains to subcontractor selection reviews and the

application of an adequate compliance monitoring process. Non-compliances concerning whether change orders have been duly reviewed before they are signed off, issues around economic analysis before financial decisions are taken, as well as a host of others that could have contributory effect on the value of an organization (Davies et al., 2000). Understanding why there are increasing non-conformances in the execution phase and bridging the gaps in all non-conformances is critical to our project management excellence mission. The lack of project learning in the existing management system, and the lack of well-trained mid-level stakeholders in the administration of the IMS system, are all relevant issues.

In order to provide a specific focus to this study within the confines of the Doctor of Business Administration (DBA) program and the University of Liverpool Ethics Approval requirements, my research on stakeholder management was concentrated on internal mid-level stakeholders and a few external stakeholders. This study was actionable and proved beneficial to my organization. It was able to demonstrate that the knowledge generated in the course of the proposed research study can be put to immediate use by the participants, whom it has the intent to engage, and the responses I received from the senior leaders, managers and colleagues in the process added value to my organization (Antonacopoulou, 2006).

1.8 Research Approach

Producing a new set of actions would require collaboration among participants working together to achieve research objectives. It was therefore critical for this study to identify and work with both internal and external stakeholders who are knowledgeable within the context of my study, to get robust data that would allow the study to satisfy my research objectives. This entails, implementing appropriate stakeholder discussions and engagement, and evaluating their ideas and contributions through a well refined stakeholder analysis to drive the implementation process. Past research shows that this process arguably, will yield positive outcomes from the clients, improve workforce satisfaction and drive a sustainable and profitable business (Friedman and Miles, 2006). Invariably, if we must sustain clients' confidence, become profitable and retain a high performing organization,

we must identify these gaps and non-compliances, develop appropriate plans, take those actions, evaluate them using the AR process and generate new knowledge and changes to improve the business.

1.8.1 Action Research and its Benefit to the Research Study

The use of action research (AR) for my study provoked new insights regarding the issues involved while applying our current integrated management system and how those can be addressed collaboratively through engaging mid-level stakeholders. The need to produce the desired level of results the organization need was actualized with an action research approach (Pedler, 2008). “When business issues are carefully addressed and are comprehensively discussed in a collaborative way, it generates reflection and enhances proper execution among the key stakeholders” (Vince, 1996, p. 119). It can only be achieved by taking critical action in the organization and applying those actions to generate learning. This AR approach produced new set of ideas for action and sourced solutions to the problem using those actions to effect a change to our IMS processes. To do this, our management, under the leadership of the organization, allowed the proposed actions from the study to be implemented to address this problem, and this contributed to the success of this study.

To build a robust AR process, the first question that came to mind when I started this research was whether I was able to work around the busy schedules of senior leaders, managers and consultants at the designated research sites to conduct the research, engage them throughout the cycle process and whether I would be able to properly blend the theory sourced through literature study with the findings of my action research work. I also have to contend with balancing the underpinning theoretical knowledge I have as the researcher with the actionable knowledge I would need to create from the study, within the time limits of the program. That distinction was clear and it supported my professional and scholarly development through the reflections and learnings the research study generated (Jenlink, 2009).

1.9 Structure of the Thesis

Chapter One discusses the background of the study, the case company, the problem statement, the objectives of the study, the significance of the study, the research approach, the structure of the thesis and the reflections and learnings.

Chapter Two discusses the literature findings related to the study. It discusses the concept of stakeholder and its divergent theories, how stakeholders perceive construction problems, their influence within the organization, the strategies they formulate, and how those shape organizational decisions. It discusses how to formulate stakeholder management strategies in construction projects. It discusses stakeholder engagement, the challenges of mid-level stakeholders during project development and execution and presents relationships between sustainability and project performance, and between stakeholders' engagement and project performance.

Chapter Three presents the methodology used for the study, the research approach to theory development, the research strategies, the sampling criteria, the factors considered when designing my interviews, the selected research philosophy, the interview process, the action research design process including what was done for each phase and my research quality assurance and ethical considerations for the study.

Chapter Four presents the key findings of the research, the engagement with the participants over the action research process, the data gathered, the analysis, the arguments and discussions on the learnings generated through the actions taken.

Chapter Five presents the discussions of the findings and the reflections and learnings gathered through the findings.

Chapter Six presents the conclusions and recommendations of the study, the study reflections over the course of the research study, the limitations of the study and the recommendations for future improvements.

1.10 Reflections and Learnings

My research primary objective was to reduce stakeholder non-compliances, enhance key performance indicators and improve construction project performances. The actionable knowledge that will be generated from this study would support future construction projects and allow them to be executed with the highest degree of compliance, foster proper engagement among stakeholders and contribute to increased profit outcomes for the organization. The study research questions provided a framework to evaluate the current project KPIs and create opportunities for engagement with the stakeholders, in order to generate strategies that will promote accountability during the development and execution of construction projects. It emphasizes the benefits of establishing these robust management strategies to address non-compliances and fix existing gaps in our IMS processes.

It also discusses the criticality of stakeholder relationships and their importance in improving project performance. This understanding of the primary aim and objectives of this study would allow the participants to reflect and share their knowledge and insights on a number of critical issues with the use of the IMS when overseeing construction projects. In addition, the ability to build strong stakeholder relationships and engagement at the planning phase of construction projects may present a robust and sustainable criterion that will lead to project success at the execution phase.

This holistic approach will allow the mid-level stakeholders to reduce process gaps and IMS non-compliances and generate new learnings that will continuously improve our IMS processes and improve the performance of our most complex construction projects. These changes will allow the construction business unit to improve the existing processes and establish new metrics to monitor and track their performances. The value engineering according to this introductory chapter should therefore commence from the front-end engineering stages which includes proposal review phase, project selections, tendering, contractor and subcontractor selections, through the monitoring stages, to the field execution stages. These are critical stage gates drivers that must be reviewed to drive the performance outputs of our construction projects.

The use and applications of all the management monitoring systems and the development of project models within the IMS overall framework should be evaluated to see how these factors drive the overall construction project outcomes or impact our EBITDA or operating income.

This chapter also talks about the importance of identifying and working with diverse stakeholders using the stakeholder management methods and tactics that would allow stakeholders needs and expectations to be constantly monitored (Warner, 2019) and (Worsley, 2016). It emphasizes the impact stakeholder management would have when a clearly defined and improved management processes exist within the organization. This was considered a suitable approach to hold the stakeholders accountable and to allow them engage and discuss critical issues that would enhance their work and ultimately improve construction project performances. (Betran et al., 2017).

CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

This chapter starts with a discussion on the concepts of stakeholder management under the different, divergent theories. It discusses the challenges of mid-level stakeholder management and discuss how to select the internal and external stakeholders, present justifications on how their needs would be met and how their influences can drive project performances. It then discusses the stakeholder management strategies to be adopted and how they are formulated for construction projects. It discusses the influence of stakeholders, both internal and external on the performance of construction projects, and look at the factors that could impact project performance when governed by an integrated management system that is outdated or non-functional. It discusses how stakeholder management could transition to stakeholder engagement and how different relationships between stakeholder management, portfolio management and sustainability impacts and influence construction project performances.

A wide range of issues are often encountered during construction and the issues can vary from as simple as an unsigned change order during project execution, to complex issues such as failure to secure approvals before executing a project (permits). All these issues have a significant impact on the overall performance of any project, especially when it impacts the profitability of the organization. Management systems are intended to help organizations address some of these gaps and when they do not, or are performing below the expectations of the clients and the key stakeholders, the effect can be severe.

Beyond eroding profits, the organization also suffers reputational damage. That lack of action may lead to increased complications as work progresses. According to Weick (2002), managers and leaders owe a duty of care to bridge gaps in the work process and must do so by understanding the areas of divide, identify what’s causing the problem, formulate new action plans, take those actions

to implement change, and generate knowledge in the process of doing so (Raelin, 2003). This is the key focus of this research study. The arguments presented by Weick was not limited to just internal stakeholders only, but arguably all stakeholders within the confines of the project who are more likely to influence the performance of projects. For the purpose of these stakeholders, the mid-level stakeholders have been considered in terms of internal and external stakeholders that play a major role in the delivery of our construction projects. The IMS processes are established as the guiding framework for all mid-level internal stakeholders and serve as our fundamental approach to executing all of our construction projects regardless of their complexities.

2.2 Concepts of Stakeholder Management and its Divergent Theories

This section discussed the concept of stakeholder management and its divergent theories and highlights how these theories would help in the creation of project values. Stakeholders both internal and external should understand their specific roles in the management of projects and must know how their behaviour can influence the outcome of the projects they oversee (Stout, 2012). Stakeholders should be aware of ethical requirements governing their work, understand the role and the interactions the clients and the regulators play in the performance of project work, understand how these interactions can generate new knowledge, shape processes, cause changes and generate profitability for the organization (Freeman et al., 2007) and (Phillips, 2003).

2.2.1 Understanding and Knowing my Stakeholders

One of the main focus of this study is to reflect on how to manage both internal and external mid-level stakeholders that utilize our IMS processes and how their influences can address the non-compliance behaviour and gaps in our IMS processes. The internal stakeholders in this context are those stakeholders who form part of our organization and are individual contributors of the project sites. The external stakeholders are the stakeholders outside the organization that are affected by the project scope, objectives and activities of the project and in some cases are the end users of the project (Worsley, 2016) They include the client and the contractors and subcontractors. To manage these

divergent stakeholders, as a manager and doctoral researcher, I must first identify and recognize these stakeholders and work with them to achieve my desired research results. Olander (2017) argued that of the fundamental tenets of stakeholder management is knowing, understanding, prioritizing and engaging the stakeholders. Hence, my ability to know my stakeholders (internal and external) will support my research project at an early stage and contribute to the understanding, prioritization and my engagement with my stakeholders to improve the performance of our stakeholder led projects (Worsley, 2016).

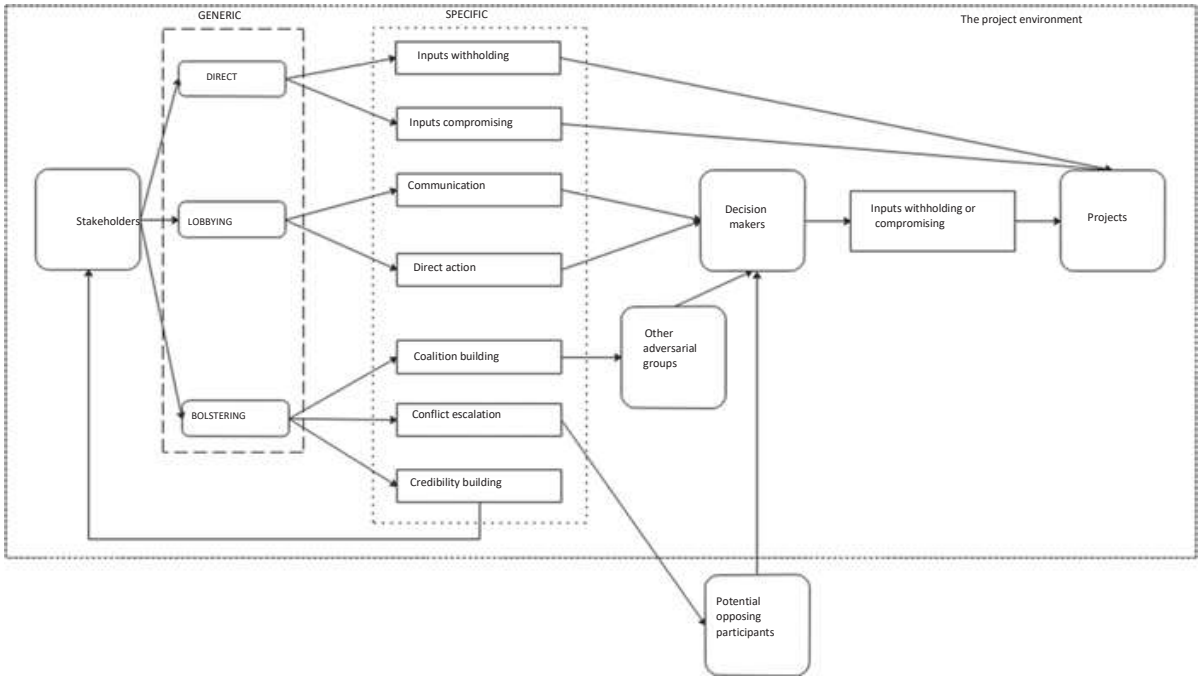

Figure 6: Pathways of Stakeholder Influence in Construction Projects (Nguyen, 2020)

I have shown in Figure 6 above, how stakeholder influence plays a major role in construction projects. By definition and in the context of this research study, the inputs of the stakeholders go as far as influencing actions and decision taking that drives the outcomes of a project. In Figure 6 for example, the stakeholder goes through a series of specific work tasks that includes their direct action, conflict resolutions and inputs/information sharing among others, in order drive and influence the project performance. For this purpose, I have defined performance as the ability of our construction projects to meet or exceed the minimum key performance indicators (KPIs) requirements. This includes meeting or exceeding the minimum budget expectations set for our construction projects of 15%. The

project budget must stay within the approved external costs (provided by the client) and within the 15% profit margin designated by the construction business unit. Schedule requirements must be acceptable to the client and within the client agreeable schedule timelines. The other KPI requirement includes completing project work with zero recordable injury rate (i.e. meeting safety targets) which includes meeting the minimum conditions of satisfaction on quality as agreed with internal and external stakeholders during contract negotiations and signing phase.

For my organization, the internal stakeholders are the internal project leaders within the construction business unit and they have a strategic role to play in leading the development of our projects starting from the proposal phase through the review of project optimization options to the monitoring and final execution phase of our projects at the field stage. These stakeholders include project directors, project managers, construction managers and project coordinators as discussed under section 1.2.1 of this thesis. These internal stakeholders are responsible for applying the IMS processes and must make sure they are applied in a manner that aligns with our construction project development and execution process and must support our overall strategic objective to remain client centric and be commercially viable as an organization.

The external stakeholders are vital to the IMS processes being discussed as they represent the end users of the final assets delivered through the project life cycle. They play a key role in the way we execute our IMS processes. Failure to do so, can reduce project opportunities, weaken our commitment to project excellence and erode our contractual obligation to our key major clients. This has the potential to reduce our profitability and could in fact pose a risk to other business opportunities. I would argue that this study provided a framework through which stakeholders both internal and external could be managed and engaged to take actions to address the work-based problem (Nguyen, 2020).

2.2.2 Justifying the Concepts of Stakeholder Management

Stakeholder management allows the building, engaging and monitoring of stakeholder relationship in the process of executing a project (Huber et al., 2006). The primary objective is to keep the stakeholders informed of what is going on and to get them involved in key decision making in the management of a project. To do that, as the manager and researcher, I must be able to identify and analyse the processes that are involved in both the identification and the analysis of the stakeholders I need for my research. This includes both my stakeholder identification and stakeholder analysis phase. The identification phase is the phase that allows me to identify which stakeholders will support my research study. This is important, because prior to assessing a potential stakeholder, those individuals that fall under the definition of my project stakeholders would have to be considered. And when this is done, the project is positioned to meet its objectives. The stakeholder analysis phase is equally an important phase to understand how my stakeholders will plan and structure the individual project. This approach will help me as the manager and researcher to anticipate my stakeholders' response towards my research project and help us formulate an action plan and engagement strategies required to plan, monitor and execute the study (Jepsen and Eskerod, 2009), (Huber and Scharioth, 2006), (Meding et al., 2013).

This presupposes that when stakeholders' responses are known during the development and execution of a project, there is a higher tendency to yield a high return rather than later efforts to seek responses in an attempt to revive the project. One example is in the principles of diminishing returns which says there will be a "decrease in the marginal returns as a result of a decrease in the marginal output of a production process when the amount of a single factor is incrementally increased" (Mold et al., 2010). The argument here is that when there is an over reliance on a single powerful stakeholder response rather than a collective response of all stakeholders, including internal and external, there is a higher likelihood to decrease the returns and eventually wreck the project. This principle is known as the "*Magpie syndrome"* and can occur when managers of projects focus and direct attention to only those that they know in the stakeholder management process while ignoring the contributions and insight

of others (D'Herbemont and Cesar, 1998, p. 1). This is quite harmful to the success of the project and would be avoided for my research study.

When it comes to maximizing the greatest outcomes of a project through stakeholder management, it is important that stakeholder engagement is strong enough to support the successful execution of the project. The stakeholder engagement is a component of the stakeholder management framework and entails that aspect of listening to, keeping the stakeholder informed and getting them engaged in the course of executing the activities of the project (Warner, 2019). This might be as simple as a stakeholder setting up interactive meetings and discussing with those people the manager does not know, or was not aware could even be of importance to the project. This seems contrary to the conventional approach of meeting and interacting with those people that the manager knows and consider as important stakeholders.

As a manager, there is pressure to constantly grow project networks, but that can only be done when managers like myself understand how to effectively identify, analyse and seek stakeholders' responses. This process will help to recognize any stakeholders that may have been missed in the course of executing a project. There are however arguments, in literature that managers may often not possess the skills, resources and connections (resource dependency) they need to do more than a superficial analysis of their stakeholders (Worsley, 2016). It is therefore important to research more on these common mistakes and know how to avoid them. This aspect is a primary research question of this study.

The first mistake for example, is to assume that sponsor of a project is genuinely interested in the project as that might not be the case. The sponsor of a project are the financial leaders who provide funding to support the project. While their role is critical and strategic to support the execution of a project, they are often doing so for a whole portfolio of projects. The second mistake is to equate the power of the identified stakeholders with the organization position and status. In practice, stakeholders may hold a particular position but may have a limited power in the context of the work to be carried out. For example, a sponsor on a project while being a senior stakeholder of a project

may not hold the same level of influence like that of an operations manager who controls and direct the day-to-day business activities of the organization. There should therefore be a distinct understanding of these key roles. To do a proper analysis of a stakeholder, as a manager, I must know who my stakeholders are, what to expect of them and how best to interact with them (Jepsen and Eskerod, 2009), (Beringer et al., 2012).

Who are they- This should be documented in the project plan regarding everything needed by the project, recognizing them and making contact with the individuals.

What to expect- This is necessary to know where the resources and the efforts should be directed at in order to maximize the outcome of the project.

How best to interact-This should be categorized in terms of how reporting the project execution process can be handled i.e. which group leads what, when do they do it, and what level of interactions is envisaged. Finally mapping the stakeholders in terms of what is known regarding the individual stakeholders (Warner, 2019).

2.2.3 Stakeholder Divergent Theories and its Relevance to the Study

In the context of my research study, it is important to know more about stakeholder theory and its many challenges in management practice. This would help to provide a background knowledge on the existing theories and challenges in literature, on stakeholder management. First, what do we mean by stakeholder theory? Stakeholder theory is a theory of organizational management and business ethics that drive the morals and values of the manager in the process of managing the business operations, to create value for all stakeholders. The key point here is that value must be created for all stakeholders and not just a few selected stakeholders (Freeman et al., 2010).

Stakeholder theory is a body of knowledge that has grown over the past 40 years and has shaped the way and manner in which several businesses operate (Freeman et al., 2010). Understanding the principles of stakeholder theory and its many challenges is important to help managers like myself

create relationships that would generate the most value for my construction division, my clients, our contractors, the staff and my organization as a whole.

The idea of managing stakeholders to create values, require that each stakeholder know their individual roles and their stakes on the projects (Stout, 2012). These stakeholders must have a perfect knowledge of what is needed to improve project outcomes and must understand what challenges is inherent when such are not considered during project executions. The stakeholders have that fundamental responsibility to do this (Freeman, 2016). According to Freeman (2010), "the stakeholder is any group or individual that can affect or be affected by the realization of an organization purpose". The aspect of creating value for the project and the organization at large, can be impacted by five theoretical underpinnings that would affect the output and the performance of the projects an organization may execute.

The total performance theory: this is understanding that the pursuit of profitability does not always lead to the largest creation of wealth on a project. The question then is, how best can we create the most optimum project performance given the many constraints on a project. This should be driven by factors that combine the total values created to the client, suppliers, sponsors, employees and the society my organization serve in order to yield a high EBITDA value for my division (the profit value; which is the earnings before interests, taxes and depreciation). When the focus is on gaining the confidence of these stakeholders, then there is a greater tendency to increase our profitability (Jones and Freeman, 2013).

The stakeholder accounting theory: this requires an understanding of how the total performance of the current project will help to generate other opportunities for the organization (Mitchell et. al, 2017). It requires that the pertinent stakeholders interact and create joint ideas that will support the project and create accountability during the process of evaluating project risks.

The behavioural stakeholder theory: there is a growing trend to understand the behaviour of stakeholders as a measure of how to deal with project issues (Phillips, 2003). Understanding the

behaviour of stakeholders will help to understand how to deal with operational challenges on projects. This would include how stakeholders can relate to the issues they face on their projects, how they can build trust during project phases, how a new change can be implemented, where the client including the stakeholders involved are seen as moral agents that drive ethics and values that other stakeholders can emulate (Freeman, 2016)

The public policy theory: this is more focused on the role of regulators to boost stakeholders' activities and influence the business operations. It is tied to the institutional approach that Gibson et al. (2006) referred to when they argued that a clear understanding by stakeholders in factors such as policies could impact how projects are executed and how the stakeholder's interests are managed to improve long term project viability (Goodenough et al., 2017). This understanding is critical as many of our projects are governed by regulators in the mining, energy and infrastructure industries such as the British Columbia Construction Association responsible for regulating construction activities, the British Columbia Ministry of Energy, Mines and Petroleum resources responsible for managing electricity, energy, mines and petroleum related matters.

The ethical theory: this relates to how stakeholders' values and ethics are applied during the management of projects. For example, for this study, my ethics and my values as the researcher was a critical factor that played a vital role in this study. The ethics and values of the participants (other stakeholders) also played a key role to support the actions that I as the primary researcher took for the study (Hardin, 1998) and (Phillips, 2003).

Each of these stakeholder theories must be well understood and carefully managed to create the most value when projects are being executed. They must be managed to such an extent that the influence of the stakeholders on the overall performance of the projects will yield what the sponsors or project executives would normally expect from the projects. The executive's role is critical as it will play a special role in the overall activity of our IMS processes. At the same time, the executive holds a strong influence and play a major part when project objectives are not being met (Beltran and Melon, 2016).

Beritelli and Laesser (2011) argued that stakeholder's influence is a good indicator for power and are driven by the hierarchy, knowledge, processes and the assets of the organization.

While the aspect of knowledge, processes and stake are supported by other stakeholder theorists, like Leroy et al. (2010), there is the argument that stakeholder interest is even more important and critical when it comes to how things should work. Stakeholder's interests should be joint and should not conflict. It should be a system of cooperation where all stakeholders work together to support the needs of the project and create value. In other words, the stakeholder influence must be strong enough to create the expected performance outcome on a project (Jones and Freeman, 2013). Jones and Freeman (2013) argued that the focus for stakeholders should be building social networks and not focusing on the pursuit of profitability.

This does not always lead to the largest creation of wealth. In Gibson's et al. (2016), they argued through their two empirical studies research, that stakeholders can also be influenced based on three main theories of; resource dependency, social network and their institutional approach. In essence, what resources are available to them, what social groups they belong to in terms of their interactions and what system and institutional framework they are governed by. Scientific theorists have also argued that when stakeholders know how they need to act or should act, then it creates the best consequences for all those with vested interests on the project to produce the most outcomes (Harting et. al., 2006).

2.2.4 Formulating Stakeholder Management Strategies in Construction Projects

Stakeholders play a significant role in project execution and in the formulation of strategies. These strategies would help a manager lead projects to a successful completion and help the managers explore all opportunities and support the manager's goal of delivering the projects successfully (Eskerod et al., 2018; Bourne and Walker, 2008; Bourgault et. al., 2014).

Stakeholders' strategies are crucial sources of influence on projects and it is very important they are well formulated in order to ensure issues that may arise over the life cycle of the projects are avoided.

The actions of external stakeholders and that of internal stakeholders in the formulation of project strategies can affect the overall project health and outcomes (Schnepper et. al., 2004).

Studies have shown that stakeholder strategies are formulated based on a number of factors that influences the actions of the stakeholders (Hendry, 2005). They include stakeholders experience and expertise, their potential allies, the value placed on money and the stakeholder's institutional environment (Aaltonen and Kujala, 2016). Stakeholders for the purpose of this study includes both the internal and external stakeholders. They are the individuals that control the development and execution of construction projects (Oppong et. al., 2017). Studies have shown there has been cases where internal stakeholders may support a project while the external stakeholders may be indifferent, in favour or even against the project (McGrath and Whitty, 2017). On that basis, one can argue that stakeholders can either help or hinder a project success based on the strategies the stakeholders employ. According to the studies by Aaltonen et. al. (2018), it is important for managers to examine which stakeholders are willing and able to support the project and examine the ones that are not, so as to employ the right strategies to deliver the project. To determine this, the attitudes of the stakeholders, the categorization of the strategies and the specific strategies to employ will play a key role in the execution of the project.

To determine the kinds of strategies, there has to be a categorization of the stakeholders and the type of influence they are likely to exert on a project. These categorizations can be either; decision makers, direct influencer, indirect influencer or an observer (Young, 2006). When stakeholders are less dependent on their firm, they are exercising their direct influence on the execution of the projects and when they do not have such established relationships, stakeholders are categorized as indirect influencers. Stakeholders can also be part of the decision makers who control the project inputs or merely observers in the process. For the purpose of this study, the mid-level stakeholders are direct influencers and are also part of the decision makers on the projects.

According to Frooman's (1999), there are three main categories of classifying stakeholders' strategies: direct, lobbying and bolstering categories. These three categories are used to explore

stakeholder strategies on construction projects. The direct category suggest that a stakeholder can directly affect a project because they control essential inputs. The lobbying category suggest that stakeholders communicate with their allies on the projects to make adverse impacts on a project and the bolstering categories help the stakeholders to enhance their ability to influence the projects which may or may not cause any pressure on the project. These 3 main categories are important in the context of this study as it would be used to determine the stakeholders' strategies that are being employed on our construction projects. These specific strategies are governed by a number of attitudes of the stakeholders including communications, inputs withholding, credibility building and conflict escalation processes amongst others. Figure 7 showed the theoretical framework of these stakeholder strategies.

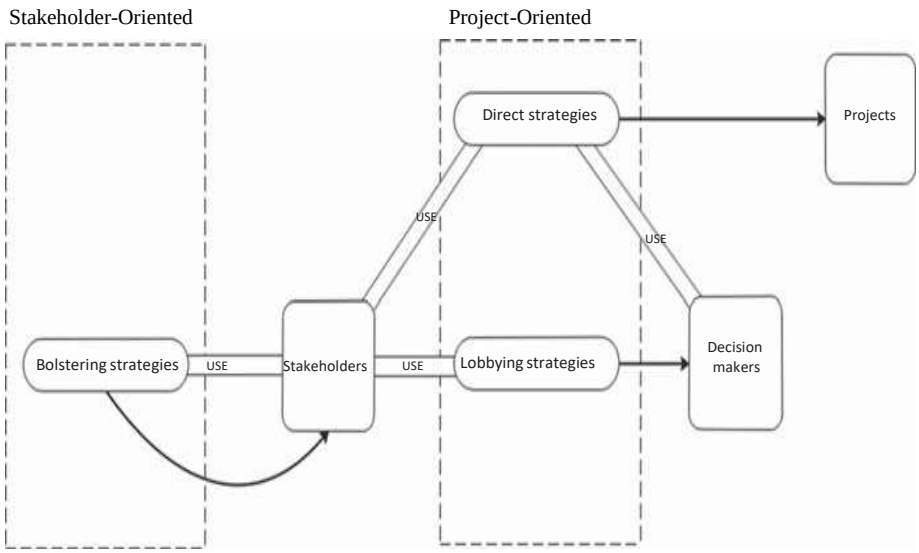

Figure 7: Theoretical Framework on Stakeholder Strategies (Frooman's, 1999)

2.3 Challenges of Mid-level Stakeholder Management

Mid-level stakeholders are stakeholders that make up the mid-level hierarchy in the delivery of projects. They are recognized as vital stakeholders to support the delivery of projects. They support the practicalities of change when it comes to how projects are delivered (Gleeson and Knights, 2007). In essence, their role in project execution is crucial and is important to understand what can help or hinder their work in the management of projects. Studies by Lunts (2012) suggest that mid-level stakeholders can be helped using effective project management skills and proper stakeholder

engagement on project work. The argument is that when stakeholders who manage projects have adequate project management skills, they are able to apply the project management processes towards their work. This however, would have to be supplemented with project management training and experience. While there is argument that a lack of project management skills may exist with some stakeholders, the vast majority of mid-level stakeholders have a clear understanding of the processes required to manage a project (Landin, 2000). The assertion therefore is that when proper stakeholder engagement exists, it will lead to successful project outcomes and a clear understanding of the processes that will curtail any non-compliances and process gaps.

2.3.1 Cultural Challenges and the Lack of Accountability by Mid-level Stakeholders

Stakeholders can also be impacted or hindered by a number of factors that could be an impediment to the success of a project (Loo, 2003). These factors include the challenges of dealing with different organizational culture. For example, studies by Lunts (2012) presented the effect of bureaucracy on the implementation of processes at the mid-level phase in the delivery of health and social projects for the organization they researched on. There was the argument that the culture adopted by the organization in this context has a significant impact on how mid-level stakeholders respond to the work being carried out. This challenge was connected to the difficulties mid-level stakeholders faced when attempting to undertake a decision without knowing how to approach them. There are boundaries within the organization that impede on the ability of the stakeholders to be able to integrate and solve them, largely driven by the cultural differences within the organization.

The same is true, when I look at the landscape of my organization, mid-level stakeholders are being controlled by certain cultures that allow only a certain group of stakeholders to discuss project issues on a project and this creates vacuum where information that could help the team deliver the projects successfully are lost in the process, resulting into non-compliances.

2.3.2 Time and Capacity Challenges by Mid-level Stakeholders

This includes the difficulty in knowing the time and capacity on the work of the mid-level stakeholders by their managers. It includes resistance by the mid-level stakeholders to change as a result of lack of time and capacity that hinders their ability to undertake management change. This is mostly driven by the sheer loads of projects that the mid-level stakeholder manages and the difficulty in being able to focus on the projects (Raes et. al., 2011).

The issue of time constraints thus raises the issue with respect to how critical it is for the mid-level stakeholders of my construction division to place priority on change management and its processes for the delivery of our projects. There should be adequate time to tackle project related issues and support the overall vision of the project. To do that, mid-level stakeholders would require strong and collective leadership in order to implement the skills needed to execute projects.

2.3.3 Communication Challenges by Mid-level Stakeholders

Communication is a key strategy for mid-level stakeholders to adopt and is a core element to support the stakeholder engagement approach under a stakeholder management framework. Stakeholders regardless of their hierarchy and level depend on some form of communication to deliver projects. It is even more crucial that mid-level stakeholders who hold most of the decision making understand and applies communication strategy as a way to manage projects. PMI (2013) established from several literature study that the lack of communication carries a significant factor in the causes of most project failures and many mid-level stakeholders also acknowledged that communication is a major issue for them when it comes to successfully completing their projects (Worsley, 2016).

In a study conducted by PMI (2016), communications were considered to account for 29% of cases of project failures. The same was corroborated in the study by Flyvbjerg (2008) when he asserts that 28% of construction failures was largely attributed to the issues of poor communication by stakeholders. To support the process of effective communication by mid-level stakeholders, there has to be a process of communication planning that must be comprehensively developed.

The process must detail, who needs what information, when do they need it, how will it be given and who is responsible for sharing. It is important that mid-level stakeholders who will lead and manage projects understand how to get this information, who among the stakeholders' chain needs them such that accurate and timely dissemination of information exist.

In formulating the right communication strategies, the mid-level stakeholders must be able to understand the fundamental questions of what, when and how the information is to be disseminated and above all why the information is required to support the project work.

When these factors are well understood and applied by the mid-level stakeholders, the project progresses from just sharing of information to a phase of persuading, negotiating, participating and engagement that ultimately improve project performance.

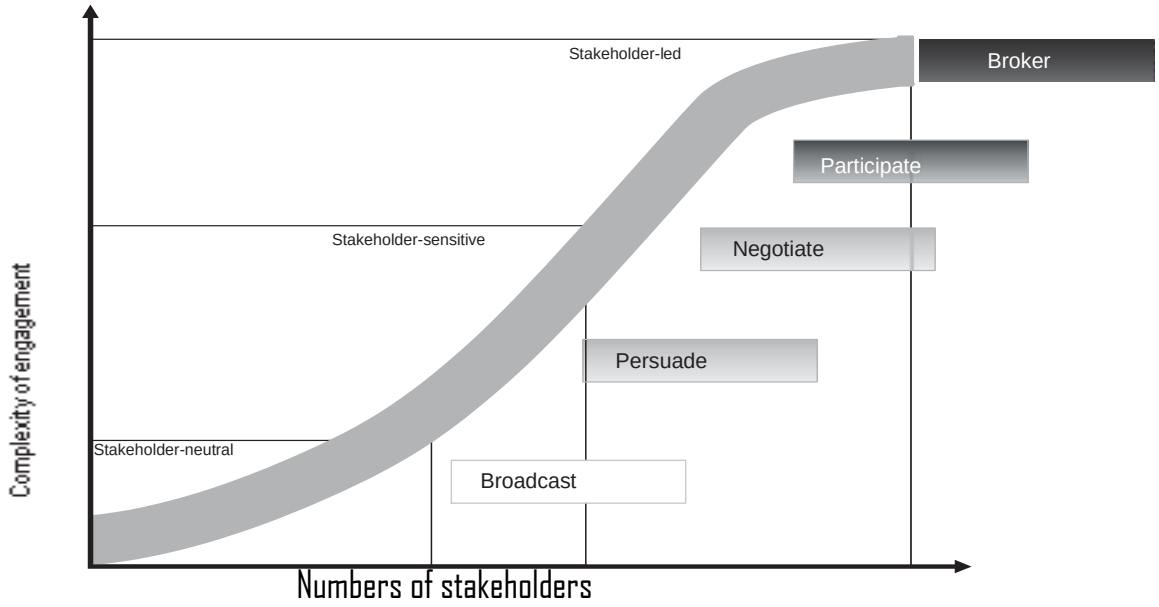

Figure 8: From Communications to Engagement for a Stakeholder Led Project Management (Worsley and Louise, 2016)

The relationships presented in Figure 8 above showed how stakeholders begin to take responsibility and action for their work as they begin to participate and engage more in conversations. The higher the number of stakeholders, there is a symmetric increase in the engagement level and an upward swing from the level of persuasion to participation to fully taking over the action/implementation

phase. This is characterized by the stakeholder moving through a neutral phase to the phase where there is a higher degree of ownership. This level of engagement further bolsters the need for stakeholders to share and discuss information more often as they move to varying levels of complexities of projects.

2.4 Transitioning from Stakeholder Management to Stakeholder Engagement

Stakeholder management is a comprehensive process of managing and building relationships with the stakeholders in the process of addressing their needs. Stakeholder engagement however is a critical component phase of stakeholder management and is a fundamental component of this research study. Stakeholder engagement takes into consideration, the aspect of engaging, and keeping the stakeholders involved and informed on the ongoing progress and changes on the project and how their influence could be affected over the course of executing the project. That part of the process as explained in section 1.4.4 will require close collaborative relationships among the stakeholders to discuss the issues to resolve and propose action plans to address them (Ulrich and Reynolds, 2010) and (Taylor et al., 2019).

In the context of this study, both stakeholder management and stakeholder engagement are necessary because the engagement is part of my stakeholder management approach. For the purpose of my study, I identified the stakeholders that would play a key role at my four main research sites, as shown in Tables 3 and 4. The next steps require managing the relationships through an integration of stakeholder management and engagement as depicted in Figure 5. According to Ulrich and Reynolds (2010), stakeholder engagement requires engaging the stakeholders in constant information sharing and dialoguing to find common grounds that the stakeholders can work on to support the project.

The stakeholder engagement framework is quite relevant for this study as it guides who has a say in the decision-making process and how well the information can be shared among them. It also supports how the stakeholders on my study would engage and how their influences would be used to shape the decisions taken for my study (Worsley, 2016). The core principles of stakeholder engagement

employed for the purpose of this study are: Stakeholder engagement first principle requires that stakeholders must have an input in the decision that affect them. Stakeholder engagement calls for a consensus that stakeholder's input will be valued and that their contributions will support the decision-making process.

The stakeholder engagement principles require seeking out all the stakeholders that could be potentially affected by or affected by a decision of the project work. The stakeholder engagement principle requires that, on identification of the stakeholders, it is important to seek how they wish to participate in the decision-making process.

The stakeholder engagement principle calls for respect and a show of collaboration among engaging stakeholders. The stakeholder engagement must allow adequate time to provide information and allow the stakeholders to freely participate. This validates that stakeholder participation will not be under any compulsion to be involved with the study.

When the above stakeholders' principles are established, there is a higher likelihood that non-compliances and failures on construction projects would be curtailed. This is because the decision-making process would be enhanced, information sharing would be adequate, honest and open collaboration would exist among stakeholders and the level of trusts would be greatly enhanced among participants (Taylor et al., 2019).

Beyond these, many research studies have shown that one of the leading causes of project failures and critical non-compliances are the lack of robust planning and the lack of competencies among stakeholders which are mostly evident at the field execution phase of projects. A review of these construction issues has been discussed further under section 2.5.

2.5 Construction Issues during Field Execution

Menoka (2014) argued that past projects' construction issues have caused nearly 60% of project failures. This abysmal planning in project performance requires changes that will find lasting solutions, such that projects can be delivered in accordance to quality, on budget and on schedule.

Above all, for projects to go beyond these traditional metrics and satisfy stakeholders' interests and objectives, there must be a robust management mechanism in place to deal with it (Ogunlana, 2010). The next sections discuss this in detail.

2.5.1 Outdated Systems impact on Project Performance

Studies from literature showed that for organizations driven by high project and operational capabilities, there is a tendency that outdated systems or processes can impede operational and project performance and create uncertainty in market success (Stewart et al., 2018). When these happen, these organizations suffer because their business objectives will become deficient. This causes a decline in profit margins on an annual basis and with no end in sight, it may eventually cause insolvency of the organization. When the profit margin expected on projects tends to decline, the organization loses its viability and commerciality, and investors' confidence becomes eroded, leading to a high degree of uncertainty when starting future projects.

2.5.2 Lack of Adequate Construction Planning

Construction planning is a key driver that may influence stakeholder satisfaction on construction projects. Flyvbjerg (2002 and 2008) asserted that up to 30% of construction projects are mostly impacted by the effects of poor stakeholder planning skills at the construction phase and escalated by less stakeholder management support at the front-end phase. His study revealed that ineffective planning and weak stakeholder management at the onset of any project will ultimately lead to poor safety concerns, poor business processes and poor project outcomes and successes. This approach will require enhanced stakeholder alignment in order to create an avenue where projects can be managed successfully (Sambasivan and Soon, 2007). This may, however, be short-lived if the front-end support phase from stakeholders is not well defined from the onset of a construction project.

Gibson et al. (2006) posits that there is a higher degree of benefit to stakeholders when they effectively plan projects and develop mechanisms within the organization that identify project dissatisfaction on time, while possibly reducing problems at the construction stage. When these steps are taken, Gibson

et al. (2006) states that a new level of management insight can provide fresh insights towards improving project performance and thereby reduce project risks that could impact project outcomes.

In principle, this is an evidence-based management scenario towards project performance because biases or prejudices in project decision making are less prevalent when stakeholders collaborate, since partnership and collective agreements are enhanced with robust planning. Furthermore, complex projects with multiple influences are better managed, rather than being influenced by unjustifiable assumptions or unmerited analysis but strictly on strong evidence base findings. This practical approach is considered to demonstrate "pragmatism, progress, systematization and techniques" (Morrell, 2008, p. 613).

Research studies by Larsen (2015) corroborated the findings from Flyvbjerg (2008) and agreed that the enormous complexities associated with construction projects would be largely to blame for planning issues noticeable in many underperforming construction projects. His findings suggest that construction projects' poor planning is largely impacted by weak stakeholder management and alignment (Olander and Landin, 2005). I would argue that this further justifies why I am very interested in pursuing this research area for my study.

2.5.3 Communications Challenges

The concept of effective communications among stakeholders has been considered a vital element to help understand how teams, groups and organizations interact, share ideas, and address ambiguous matters in a complex and competitive construction industry (Gareis et al., 2013). As asserted by (Flyvbjerg, 2002), 28% of construction failures in the construction industry were as a result of lack of effective communications among stakeholders.

Past studies suggested that the development of an effective communication strategy will help unravel truth and increase understanding of project management frameworks in organizations. These ultimately will improve knowledge and present new ideas and reasoning towards project governance. Rondinelli and London (2002) also argued in support of the importance of effective communications

among stakeholders. The development of a comprehensive management strategy that not only addresses the complex problems we see in project delivery, but positioning every stakeholder at every level to a state of supportiveness within the organization is critical. In addition, Payne and Calton (2002) emphasized on information flow for effective communications among stakeholders. In their studies, they argued that the demand for information from a broader group of stakeholders has resulted in the development of a variety of forms of stakeholder dialogue.

The views offered by Selstead and Hinze (1991) offered multiple arguments as to what level of impact this could be. The insights suggested that, although the performance of these projects can be affected by poor communication factors among stakeholders, one identified mechanism to address it, is the use of effective communications among stakeholders.

There has been a number of projects that were schedule-driven without any consideration for effective communication among relevant stakeholders; however, this has been a major causal factor to underperforming projects. While communication challenges can be an impeding factor, there has also been argument that failures among schedule driven projects had been underreported and are mostly driven by other factors, such as, unrealistic profit targets set by stakeholders at the highest level of the project, with less regard for quality and safety (Vos and Achterkamp, 2006). Poor stakeholder communications among stakeholders in resolving these kinds of issues does have a negative impact.

2.5.4 Poor Management Skills and Weak Management Strategies

In other research studies, such as those by Nwachukwu and Emoh (2011), they argued that poor project management skills and strategies employed by the professionals who takes over the role of Project Manager is critical in order to properly understand the intricacies inherent in the functions of management, and in directing the efforts and activities of the project. They alluded that poor management skills have significant effects on many types of projects because they reflect the decisions taken by the project leaders during development and execution phases. In other research studies on project performance and stakeholder management, there has been the discussion that these

failures are prevalent because the decisions vis-à-vis strategies made by management in controlling the project execution phase may have posed problems.

Some of these strategies are mostly around safety and environmental influences at the tail end of the project (Bella, 2001). Bella argued that if stakeholders such as mid-level stakeholders put effective strategies in place and made proper decisions, then many of the impending impacts of construction failures would be minimized. Bella (2001) suggested that organizations in developing countries were more probable to face project construction challenges and are more likely to be impacted if management strategies are less robust in dealing with these issues.

Thomas and Ellis (2007) argued that if the management strategies were robust enough, there would have been a greater influence on the outcomes of the project. Their arguments were such that the problem requires significant, well thought through and robust management systems to address many of the issues in a way that would yield the desired project outcomes. In essence, they alluded that project leaders, including project managers and construction managers, all have the responsibilities to revert this poor state of underperforming projects. These improvement processes include right project selection, optimization and a refined management system that will limit construction transferrable problems (Thomas and Ellis, 2007).

2.6 Relationship between Sustainability Targets and Project Performance

The role and importance of sustainability in project management work is crucial, as it raises the questions pertaining to the stakeholders' roles and responsibilities in the management of projects. The stakeholders possess a significant level of influence on projects and they can effectively do so when they understand the social, economic and environmental factors (i.e. the sustainability related targets) that can impede or influence the performance of construction projects. Each individual stakeholder must understand clearly how they would control the project resources to meet all targets on the projects. Silvius and Graaf (2018) suggested that there are a number of factors that must be considered

by the stakeholders who lead projects in order to demonstrate a strong influence on the sustainability fonts of the project (PMI, 2010).

The arguments underscore the importance of divergent thinking rather than convergent thinking especially as it relates to sustainability related targets. These would include the ability of stakeholders to listen to the key issues, discuss them and work out robust strategies to address them. These are issues relating to economic, social, risk and environmental matters that often times dictate the outcomes of construction projects because they either impact profitability or affect the well being of the people in the environment and may have adverse impact on the environmental footprints of the project sites. This presupposes that mid-level stakeholders who lead projects must be those that could collaborate and think divergently, in order to meet both the needs of the projects and the needs of the end users of the projects. When such stakeholders' engagements exist, there is a greater sense of accountability among stakeholders and they are more likely to meet the needs of their clients and projects because they recognize their contributions will be valued (Goodenough et al., 2017).

As the manager and a researcher, I would argue that these factors are critical to improve the performance of our projects and to support the project delivery process. It provides a pathway through which all identified stakeholders can take up their responsibility to influence the project. I have considered this important enough for it to be integrated into my research study to shed more light into the understanding of the governing beliefs of the stakeholders and how that could influence their beliefs and their decision-making process. The behavioural beliefs; about the likely outcomes of the behaviour which can influence the project. The normative beliefs; the beliefs of the stakeholders about the type of sustainability expectations for the project and finally the control beliefs; which relates to the presence of factors that might facilitate or impede the project performances (Silvius and Graaf, 2018).

2.7 Portfolio Management and its Relationship to Managing Stakeholders

Project Portfolio management is the art and science of selecting and overseeing groups of project investments to support the strategic objective of the organization. The objective of portfolio management is to ensure that the collective selection of projects is deemed suitable to meet the organization's risk tolerance level or fulfil its long-term strategic goal.

According to Rajegopal (2013), if the organization must maximize its benefits, it must be able to allocate its resources in such a way that it meets the corporate objectives of its business. In doing so, the stakeholders must have a robust strategy that would enable the project to work with those stakeholders that can offer insights on how the project can be moved through the review phase up to completion. In the context of my organization, such decisions can be connected to building a robust relationship between our project review committee (PRC); the committee that evaluate all our proposal submissions, and the responsible mid-level stakeholder, to discuss issues pertaining to risks, cost, schedule, contractual obligations and resource allocations on projects.

The knowledge generated through this review can then inform the next step of the project execution process. This knowledge base is critical in helping the organization's key stakeholders, especially those who will lead the projects, align their own strategies with those provided by the PRC over the life cycle of the project. I would therefore agree with the postulations offered by Meding et al. (2013) that a strategic process of managing stakeholders' needs is critical and should start by first knowing and understanding the project portfolio requirements, understanding the interests of the business unit in terms of their business targets and strategic plans, evaluating those interests and being able to measure these interests when selecting portfolios that would meet the strategic objectives of the organization.

It is therefore imperative that mid-level stakeholders who would drive such initiatives must be visionary and must have a clear understanding of the strategic goal of the organization. They must be mid-level stakeholders who carry a tremendous responsibility to support project goals, with interests

that is devoid of any conflicting self-values; between their own interests and values, and those of their organization.

When it comes to managing those interests, care is mandatory to avoid conflict of interests. A handful of mid-level stakeholders in diverse organizations have found themselves in precarious situations, and have thought of the following: should we do it right or should we do it the opposite way, avoiding processes or systems or cutting corners during the execution phase while focusing their objective on finishing projects early enough, making profit and dealing with the other issues after? A typical example is the major oil spill incident by British Petroleum (BP) into the Gulf of Mexico, where 780 million litres of oil were spilled, partly due to a lack of planning and the sluggish response in a critical situation including overlooking several environmental checks (Zafar et al., 2014).

In my organization, mid-level stakeholders manage diverse projects from inception through optimization to completion and are often saddled with responsibilities of identifying improved ways of doing things at different phases of projects. The most challenging part for them is often at the front end (FEED) phase; this is the phase at which the conceptual design, planning and feasibility reviews take place. The most significant factor to many stakeholders at this FEED phase is the intent to complete the projects in an expedited manner with little regard for proper stakeholder management, which I would argue could have helped assess the risks at the early phase and prior to the detailed construction phase (Cotton, Gray and Maas, 2017).

2.8 Influence of Stakeholders on the Performance of Projects

Olawale (2010) argued that if managers who manage a large portfolio of projects can demonstrate visible project leadership through proper engagement among stakeholders, there is a higher tendency that a well-defined project delivery system will be formulated. Stewart et al. (2018) also raises questions around whether or not there is effective portfolio management to weigh current performances against targeted performances and establish measurable key performance indicators to drive out abysmal performance. Other researchers such as Ng et al. (2014) also identified, amongst

other factors, that over-reliance on existing project management skills as an issue that needs to be corrected. In essence, failure to learn from other projects' failures is presumably a contributing factor to the many challenges that impact project performance (Olawale, 2010).

Project managers and construction managers are required to apply their own judgement with minimal consultation in a review process. This approach can have adverse challenges in meeting project targets. In most situations, for example, it leads to rework and such rework has a large tendency to result into huge financial and scheduling implications.

While my research study seeks to reveal how stakeholder management can improve project performance, there are other factors proposed in literature that could also impact the performance of projects as it relates to stakeholder management (Flyvbjerg, 2008) and (Aaltonen et al., 2010). These are inadequacy in planning at the onset of construction, deficiency in leadership, increased level of scope creep during execution, gaps in the construction execution plan, several levels of organizational bureaucracy noted in large diverse organizations, inexperienced contractors and consultants selected for work and unrealistic operational targets.

In further empirical studies on the influence of stakeholders on the performance of construction projects, Goodenough et al. (2017) assert how important it is to look at the influence of stakeholders, as the impacts could be quite significant. His arguments were that this area of research has garnered lots of attention in recent years, largely because of the declining state of construction projects. Stakeholders influence on construction projects play a huge role (Olander and Landin, 2005) and their influence could drive project performances and address non-compliances, but understanding these issues under an integrated management system lens is yet to be fully explored (Nguyen et al., 2020). This research study would explore how to reduce non-compliances and process gaps in order to improve project efficiencies while enhancing KPI effectiveness.

The effectiveness and efficiencies in the context of this study are two different bases to discuss how I intend to measure the performance of projects. Effectiveness for this purpose can be defined as

understanding how my selected project sites meet or exceed set KPI values of low budget, being ahead of schedule and safe work with zero non-compliances. The effectiveness factor will demonstrate if that goal is being met and if they are serving the intended strategic objective of influencing the work that we do. It would further illustrate if there is a need to change any of the KPI metric to meet the project goals.

The project efficiencies on the other hand are connected to the ability of the specific project to be executed with the minimal amount of resources that would allow my organization to realize the highest profit margin with the least amount of resources, including but not limited to personnel, money, equipment and materials.

2.9 Learnings from Literature Review and the Basis for the Research

In order to be able to develop the right interview questions and support my research questioning phase, I took lessons from my literature study and this informed me about the research questions to use for my study.

One of the key learnings from the literature is the understanding of the effectiveness of using key performance indicators, often regarded as (KPIs) when measuring project performances. The literature study highlights that when KPIs are known and are clearly defined, it helps to confidently measure the performance of such projects in an acceptable way. KPIs according to the literature study is a robust way to monitor the performance of projects (Hinze and Selstead, 1991).

It is generally believed from literature study that these critical indicators highlight not just a well-defined approach to evaluating projects but allow the researcher to evaluate their own effectiveness in the evaluation of a new project opportunity (Mansell and Philbin, 2020) and (Nguyen, 2020). I believe understanding these KPI effectiveness would help boost confidence levels of stakeholders and enhance the likelihood of project successes. This is so because it will present to the end users' ways to improve KPIs and identify areas of gaps.

Another key learning from literature is understanding and learning more about the factors that are capable of driving project efficiencies while limiting project failures and non-compliances. Menoka (2014) argued that construction planning issues have caused nearly 60% of project failures (Menoka, 2014). This line of arguments suggests a lack of robust planning can impact project efficiencies and a deficient management skill is a major contributor to poor project performances and non-conformances (Chau (1997), Heravi et al. (2015) and Nini et al. (2018). It is therefore important that a comprehensive management strategy, that addresses the complex problems we see in construction project executions and allow mid-level stakeholders to reduce non-compliances in their work, be implemented and actionable.

When it comes to developing robust stakeholder engagement and strategies, the literature discusses the key role stakeholder identification and engagement plays in the management of projects. The idea of managing stakeholders to create values, require that each stakeholder know their individual roles and their stakes on their projects (Stout, 2012). The studies by Worsley (2016) asserted that one of the fundamental tenets of stakeholder management is the ability to know all the stakeholders (internal and external) that will support the project at an early stage and work with them to address issues to improve the performance of projects (Worsley, 2016). This learning is critical and would also allow me to know what factors drive those engagements and how those engagements could be further enhanced.

In order to improve project performance through stakeholder management, studies from Rajegopal (2013) suggested that project resources have to be well allocated to support the realization of the project objectives. In the same arguments, the allocation of these resources should not and must not justify the emphasis placed on high profit margins by most projectized organizations.

This is so important because setting unnecessary profit targets by stakeholders at the highest domain of the organization places tremendous burden on the mid-level stakeholders and only show there is a priority shift from effectively managing those assigned resources but more on the attainability of profit targets for the organization (Achterkamp and Vos, 2008). Such influences create an

environment that weakens performance and create unrealistic operational targets, that eventually lead to more unforeseeable project looses.

Overall, the literature offered significant insights regarding how KPIs could provide a measurable way of determining the performance of construction projects during project development and execution and how effective they would serve to determine the financial health of a construction project. However, the literature fell short of offering any action plans that would support the sustainability of our management processes nor provide any insights to improve our project KPIs performances under the existing IMS processes (Craddock, 2013). These issues remain unknown in the context of my research study and would need to be explored further.

There is no clarity from literature as to what our business unit under an integrated management system, should do when projects are not meeting targets; what should be done to cut down cost and schedule overruns and remains profitable. And how can stakeholders anticipate or eliminate these cost and schedule overages, manage scope changes that leads to unauthorized change orders, and still meet our financial targets under the existing IMS processes (Mansell and Philbin, 2020). These issues remain unknown and would need to be explored further.

The literature confirmed that management strategies are necessary and should be channelled to address non-compliances and fix existing gaps in organizational processes. It however fell short to provide any insights as to typical management strategies that have been used when large number of non-compliances exist within the system (Bourne, 2009). What are the specific steps mid-level stakeholders should take to eliminate these non-compliances? What would drive the appropriate stakeholder behaviour, are there certain recommended training that stakeholders must go through, and what should senior managers do to manage these complexities, control the interdependencies and mitigate the risks (Cotton, Gray and Maas, 2017).

The literature fell short to provide any governance approach that could offer ways to improve our existing IMS processes nor does it offer any steps to take in ensuring that we remain sustainable,

boost our gross revenue (top line) and ultimately increase our profitability margins or EBITDA (bottom line). These are strategic goals that are necessary in regaining our client satisfaction, delivering project excellence, sustaining our business operations and maintaining a robust health, safety, environment and risk management process as a global organization (Barnett, 2006). This aspect remains unknown and would need to be explored further.

Through the learnings from literature, I developed interview questions to seek further insights into how management strategies could be used to correct reoccurring process gaps and non-compliances and provide clarity regarding challenges that stakeholders face during construction project life cycles, the level of influences and engagement required, what factors drive them and how these stakeholder engagements could be used to improve our overall project performances (Leroy et al., 2010).

The learnings also allowed me to reflect on how the shortfalls in the existing IMS processes may have contributed to the increase in the percentage number of non-compliances and process gaps over the years, and how these non-compliances could be eliminated or reduced to improve our overall project management excellence (Goodenough et al., 2012). Reflecting on these learnings allowed me to generate interview questions that would address these areas of unknowns and deficiencies and provide clarity on measures to take to correct them, especially pertaining to project approval limits, project planning issues, cost and schedule management, subcontractor management, risk assessments and health, safety and environmental issues in our existing IMS processes. The goal was to generate fresh ideas and insights outside of the conventional approach to effectively reduce losses, improve our key performance indicators (KPIs) and increase our profitability. Further details regarding how this problem was diagnosed, the interview questions asked and how those shaped my action research design framework process is provided under section 3.8.1 of this thesis.

2.10 Summary

The views offered in this chapter discussed several divergent theories and how those would help to create values for our projects. It provided a framework through which stakeholders could be

identified, understood and selected. It illustrated how stakeholders influences during action taking, sharing and withholding of information can either influence the project decision makers positively or negatively and how those can be perceived by the participants that are outside of the project cycle.

In understanding all these influences, this chapter provided a framework in which stakeholders can build an engaging relationship with themselves, keep participants informed about respective stakeholder needs and how those needs could influence the performance of projects.

It discussed how stakeholder management strategies are formulated and how the agreed strategies could support the manager's goal of delivering projects successfully. It looked into some of the construction issues and examined some of the challenges that stakeholders faced that trigger many construction failures. It also discussed the influences of mid-level stakeholders' skills and competencies and the criteria that govern the legitimacy of the stakeholder (Mitchell et al., 2017).

It then discussed how stakeholder engagement and influences have been and can continue to drive project performance (Goodenough et al., 2012). It discussed how stakeholders influence impact project performance (Leroy et al., 2010), but there is still no clarity as to the kind of strategies that must be developed by these stakeholders when working under an integrated management system (Genaro and Loureiro, 2015).

These strategies are critical and would help to identify the reoccurring gaps and behavioural non-compliances under an IMS process. These specific management strategies would be explored further in this study (Gibson et al., 2006).

CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction

This chapter discusses the research methodology, research approach, the data collection and sampling strategy and the interview process used for the research study. It also discussed the research philosophical position, the precepts of action research and the action research design techniques used for the study. This includes the methods and techniques used to collect the data through the action research cycle phases. This chapter also discusses the research quality assurance approach and the ethical considerations adopted for the study.

3.2 Research Philosophies

Research philosophies are essential tools needed to govern any intended research process. They are integrated under certain research assumptions to develop the full research design for a research study. The following research assumptions were considered for this study. The first was based on the influence of the realities of the research *(ontological assumptions).* The second, on what could constitute acceptable knowledge *(epistemological assumptions).* The third was based on the role of values and ethics of the researcher *(axiological assumptions)*; the axiology component evaluated my values as the researcher to see how they fit into the overall scheme of the research (Saunders, 2019). The research philosophies govern how the research would be conducted to generate the intended knowledge and the overall framework of the research (Hammond and Wellington, 2012).

Having reviewed the different research philosophies (realism, interpretivism, positivism, postmodernism and pragmatism) and their fundamental principles, I chose the ***"pragmatism"*** research philosophy because it was compatible with my research goals (Saunders, 2019). According to Morgan (1983) the techniques adopted in any research must be such that the knowledge generated is complemented by an appreciation of the nature of the research and must inform the knowledge to be generated. My research aligned with this and presented a clear understanding of the key

performance indicators' influence on the overall performance of projects and on the effectiveness of the management system needed to manage the project's development and execution process. It generated debate about the research itself, looking through our management system that we currently use, to execute our high-end projects.

3.3 Pragmatism

What is pragmatism? Pragmatism as a method of philosophy has the primary intent to make ideas clear and draw practical effects to these ideas. This is to avoid confusion by referring these ideas to their practical effects (Meyers, 1989). Pragmatism considers an idea is indeed true if it has a practical efficiency and if it works satisfactorily, but says it should be rejected if it does not.

Pragmatism focuses on the consequences of the research being carried out and on the research questions rather than on the methods. This is quite compatible with my research as my focus will be drawn from the knowledge of the participants who have a stake in the execution of our projects and who will help in answering the research questions relating to key performance indicators as an approach for assessing projects, on the management system effectiveness and on the level of engagement required to drive the system. In other words, there is a connection between establishing what the participants view as valid if it can be proven versus what is supported by facts gathered through the data collection and analysis process (Huberman and Saldana, 2014).

According to Johnson and Onwuegbuzie (2004) they compared this to "*giving meaning to narratives and narratives giving meaning to numbers".* Arguably, the responses from the participants (which in this case can be seen as the numbers) would help me as the researcher to develop a set of actions that would effect a change in my organization and generate new learning in the process that can be put to immediate use (actionable knowledge).

3.3.1 Ontology of Pragmatism

This relates to the effect of the rich, complex and external realities of this research study and how those could influence the study. In other words, the ability of the research study to be governed under

the processes, experiences, practices that my organization uses to execute projects. The processes are often designed and are established on industry best practice, some internally developed business processes and our integrated management system (IMS). They are governed under the well-established project management guidelines (PMI, 2013), and our own internal policies and practices will be used to form the baseline knowledge of this study. Having this will serve as a backup and will help to validate the nature of the outcomes that the research will produce (Johnson and Onwuegbuzie, 2004).

3.3.2 Epistemology of Pragmatism

The knowledge generated from the study will help us to understand more clearly what the critical issues are and what could be done to impact change through the systemic process of collaboration with others. That process requires working within the integrated team using the actions developed to make a change in the organization, cause reflexivity among the participants and generate or specify new learning when leading complex projects (Rorty, 1982).

The concept of pragmatism ties very much to the nature of action research as it helps to formulate, accumulate and organize actions in order to generate actionable knowledge that can be put to immediate use, while increasing value and profitability to my organization (Tenkasi and Hay, 2004).

3.3.3 Axiology of Pragmatism

This is value-driven research and has originated on the researcher's keen interest to establish participatory action research where participants can generate contributory knowledge in the development of the action for the study. As the researcher I adopted a number of core values as the guiding principles for this research work. They are: integrity, commitment to excellence, treating participants and managers with dignity and respect and maintaining their confidentiality in accordance to my ethics approval requirements. I believe understanding the value position of the stakeholders would be pivotal to creating this new mutual learning process that would generate new knowledge in the process. Hence this philosophical approach would support reflexivity across the

stakeholders. It will help create good faith about the nature of my research and would draw attention of my organization to gaps in the process to build a robust and overarching research analysis (Walsh and Kaushik, 2019).

3.4 Research Approach to Theory Development

Abduction, deduction and induction are three systematised concepts that form an approach to theory development. Abduction plays the role of generating new ideas or hypotheses; deduction functions as evaluating the hypotheses; and induction justifies the hypothesis with empirical data to create theories. In summary, the argument relates to whether the research will be about theory testing or theory building. For this study, it will be about building new theories that contribute to knowledge.

3.4.1 Abduction

Abduction, as the first core concept, constitutes the first stage of a research investigation and follows an interpretative process. The abduction approach to theory development begins with a known fact being observed (Ketokivi and Mantere, 2010). The very basis for abduction is on the evaluation of a certain number of facts, attempting to review the facts, then sorting them to obtain an idea of what could have happened.

3.4.2 Deduction

While abduction leads from empirical facts to theory, deduction deduces useful theoretical hypotheses. In the deductive research stance, the research approach to theory is to test the theory from the data collected (Havard, 2013). A deductive process can, in other words, mean obtaining probable, applicable and recognisable experiential consequences based on theory (Patton, 2003). The deduction approach does not produce new hypotheses or assumptions, because it is fundamentally self-referring (Peirce, 1960). While it does not create new hypothesis, it deduces existing theoretical hypothesis. The concept of deduction was considered useful for my study to explore or test this existing hypothesis and to help refine my theme creations in support of new theories generated from my study (Dougherty et al., 2000).

3.4.3 Induction

For an inductive approach there is the development of a new theory (Huberman and Saldana, 2014). The researcher aims to build theory to support the research. The basis of this research is in the development of that new theory and not on testing an existing theory as a deductive approach would propose. This would create a new framework in which our stakeholders can invest to increase project performance. I would consider this approach suitable and my argument is based on prior scholars' arguments that if a good theory must be built, then it must be sensitive to the "meaning making" of participants and must explore the dimensions of the participants' behaviour to the situation being exploited (Dubois and Gaddle, 2002) This way it creates shared knowledge and allows practical and sustainable changes to be made. The argument here presupposes that if my research must build a good theory, then there should be a critical reflection in the way the theory is being used by the participants to bring changes in the environment in which it is being implemented.

My research aims to connect these relationships together and effect practical changes that would generate knowledge and build a more reflexive organization (Friedman and Rogers, 2009). My research focuses on improving project performance through stakeholder management; hence it will help inform the organization of what can be done and how it can be done, such that project performance can be improved, and the system and its processes can be enhanced while at the same time actionable knowledge can be generated. It will take actions from my analysed data and use that to make a change in the organization, up to the point where the evaluation of the change generates new knowledge that can be put to immediate use (actionable knowledge). This approach will drive the way we execute our active and future projects and will help my organization derive the most value that it needs (Raelin and Coghlan, 2006).

3.5 Research Strategy

Action research method was considered more suitable to my study on improving project performance through stakeholder management, as it allowed me to concentrate on those projects that are a major influence on our stakeholder's management framework. The action research strategy allowed

engagement of stakeholders, so as to understand some of the techniques they have applied to similar problems when it comes to using the IMS system. Action research for my study involved taking actions to effect a change plus researching to investigate the problem in order to make these changes happen (Nugent and Hollingsworth, 2012).

For my study, action research strategy offers a more in-depth way to address the gaps in our integrated management system and develop new mechanisms in which the stakeholder's engagement can be enhanced. This ultimately would help curtail project inefficiencies and generate improvement that will contribute to the bottom line of our organization. The ability of action research to improve the quality of the organizational processes makes it more suitable for its use. Hollingsworth (2005) argued that action research is an action-oriented reflective practice that stems from the researcher having concerns about some aspects of their practice. This argument is compatible with the intent of this study. The intent was to apply this on complex projects that were between the value of $250K but less than $2M, monitoring these KPIs and other metrics on the performance of our projects. These projects are the mainstream projects of our business and they drive profitability.

3.6 Data Collection and Sampling Strategy Approach

Data for this study was collected by conducting semi-structured interviews with eight participants comprising of six internal stakeholders and two external stakeholders. The sampling approach for the study entailed using '*homogenous sampling in combination with a stratified purposeful sampling"* (Patton, 2003), which depicted characteristics of the stratified data; to be collected, and facilitated easy comparison of "themes" used for the study. For example, I was able to stratify the purposeful sample using stakeholders' categorization type; internal and external stakeholders (participants), engagement phases; stakeholders involved in the front-end development phase, such as PCs, PDs and stakeholders involved at the tail end execution phase, such as CMs and PMs (stratified). The essence of this was to allow the concentration on a set of stakeholders that can majorly contribute to the data collection phase (homogeneous). These stakeholders were drawn from those that were actively

engaged with the organization's research sites or had a stake in their execution. The data that comes out of these types of sampling were not impacted by number.

At the onset of the research study, a total of ten participants were identified as meeting the selection criteria for the research study; these are participants that possess managerial experience, understood the criticality of the work-based issues being dealt with and were actively involved with the selected project research sites or had a stake in their execution. Eight participants out of the ten participants initially identified became the final study participants, as two of the external participants were not available at the time of conducting these interviews.

There were therefore six internal participants and two external participants who accepted to participate during the interview phase of this action research study and were actively engaged at the research sites. The focus of the study was to concentrate on these eight stakeholders who were actively engaged at the research sites and whose actions would help to generate new knowledge and learnings that could be put back to immediate use; actionable knowledge (Antonacopoulou, 2006). These stakeholders had lead roles in leading, managing, controlling, directing and overseeing several interrelated activities under the existing management system at the selected four active project sites, #1-Retaining Wall Maycrest project, #2-Grease Trap Replacement project, #3-Nusatsum River Bridge project and #4-Red Dog mine operations project.

All eight participants were considered suitable and were actively engaged at the research sites. They contributed to providing all the required and valuable insights for the study until the research data reached a saturation stage. The selection of the two clients were mostly based on these involvements and was considered very suitable for the study also because these two clients were critical clients who are major revenue generations for our construction business at 29% (participant #4) and 17% (participant #3).

The stakeholders involved in the front-end development phase of these project sites were four participants; #1, #2, #3 and #7 as identified under Table 2 and Table 3. These participants were mostly

instrumental for the development of project plans, developing project baseline schedule, developing project strategies and objectives, developing work breakdown structures, coordinating pre-construction activities including but not limited to project front end costing and financial set-ups, establishing quality control procedures and overall senior oversight for the project sites. The remainder four participants; #4, #5, #6 and #8 as identified under Table 2 and Table 3, were actively involved at the execution phases of these research sites and played key roles in managing all risks, developing risk matrixes, developing execution strategies, overseeing long lead items, monitoring execution project costs and overseeing construction phases at the project research sites.

My research approach considered only key participants with knowledge and insights on the research areas. This provided a subjective view that would later inform the outcome of my research findings. Figure 9 showed the action research framework process from diagnosing, to action planning, to action taking, evaluating, and specifying learning as discussed in details in sections 3.8.1 to 3.8.4 and 4.5.

Figure 9: Action Research Framework Process (ASCE, 2015)

3.7 Participants Categories and Interview Process

3.7.1 Internal Research Participants

To support my action research framework process, I had to make a determination which internal participants would be able to provide me with the required insights and data that will address my research questions at the interview phase. Those that have the managerial experience and understood the issues relating to our project performance, or are actively involved or a key stakeholder in the development and execution of the four projects of this study and are aware of the behavioural non-compliances were considered suitable as internal participants.

According to Patton (2003) I had the understanding that the total number of participants for a qualitative study of this type cannot be less than 4, but I also understood that I must consider that my data may reach a saturation point, where no need for other participants input may be warranted.

On this basis, I interviewed eight participants; seven males and one female, with six of them being internal participants. Many holding engineering and project management degrees and possess the required background for my study. A few participants also have accredited certifications in project management from the Project Management Institute (PMI). The six internal participants used for this study were able to provide me with adequate information up to the point, where I concluded that any new data would be redundant. Table 2 provided a summary of these participants and their profile information including the individual participant experience level depicting their project management experience, project coordination experience, construction management experience and project controls experience.

Participants	Positions	Experience Level	Qualifications
#1	Project Development Manager	20 years' project management experience	Engineering and an MBA degree. Project management professional (PMP)
#2	Director, Project Delivery	19 years' project management experience	Engineering and an MBA degree. Project management professional (PMP)
#5	Project Manager	9 years' construction management experience with major capital projects	Engineering degree
#6	Project Leader	21 years' project coordination and project cost control experience	Business Administration degree
#7	Project Coordinator	6 years' project engineering experience	Engineering degree with PMP designation
#8	Project Manager	8 years' construction management experience	Engineering degree

Table 2: Internal Research Participants

Table 2 provided a summary table that described the profile of each individual internal participants involved in the study. All participants except one were engineers with significant project management experience. They are aware of our IMS processes and aware of the issues being researched on. Participant #6, has a background in business administration and is a female and a non-engineer but considered suitable for the study because of her significant project involvement in all of the research sites. The essence is to gain her perspectives of the issues we face during the management and execution of our projects. Overall insights gained from all these participants was very helpful as it would be reflected in the details provided in this thesis.

3.7.2 External Research Participants

In order to ensure a holistic view of the study, I requested participation from four external participants in this process, but only received two interested external participants, who were able to shed light into other aspects of my study that the internal participants could not address especially as it pertains to what factors could help us minimize risks impacts to our projects and improve our project efficiencies

from a client perspective. Turner (2010) argued that the use of external participants would help to gain more alignment in the research process and would reveal how management process perform. I agreed with Turner's theory and decided to proceed with this concept. I believed this was also an approach for me to gain constructive feedback from external stakeholders to support the research process (Coghlan and Brannick, 2014).

Participants	Project Position	Experience Level	Qualifications
#3	Senior Project Manager	24 years' project management experience	Engineering degree. Project management professional (PMP)
#4	Construction Manager	10 years' project management experience and	Engineering degree

Table 3: External Research Participants

Table 3 provided a summary of the qualifications and experience level of the external participants I used for my study. External participant #3 is particularly helpful as this client, parent company served as a major revenue generator for my construction business unit at a 17% revenue generation.

Figure 10, provided an overview of our revenue generation portfolio for the past five calendar years. The second external participant #4 also worked for one of our major clients that made up 29% critical revenue generation of our business. These participants provided overarching inputs to my study.

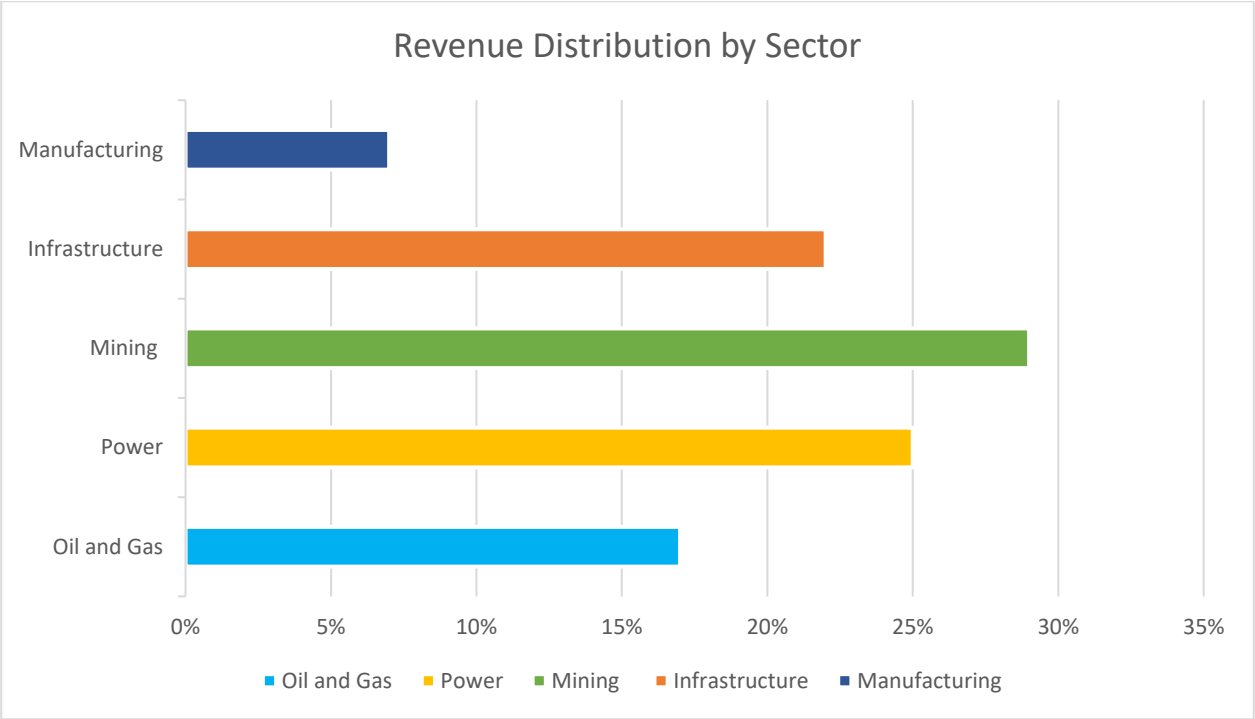

Figure 10: Revenue Distribution by Sectors

3.7.3 Interview Process

The interview process required interviewing the participants that have significant knowledge who could provide insights to the active projects at the identified research sites. The data were collected with the mindset of meeting the research goals but, more importantly, in answering the research questions developed in section 1.5.

The process involved asking insightful questions during the interview process that would not limit the respondents' experiences and knowledge, but allow them to express their own position more transparently and freely while providing responses to the questions being asked in the process. I applied the Hollingsworth (2005) interview approach below to help me to get the most information from the individual interview used for this study. At the end of the interviews, the data collected was transcribed and used for the analysis phase of the study (Creswell, 1998).

To start my interview process, I read out the participant information sheet to my potential participants to discuss the statement of the problem, why the participant is being selected for the study and the specific needs for the research. The participant was given permission to participate freely or to decline

participation. I introduced myself and ensured the atmosphere remained professional; and I moved into the questioning phase, allowing an atmosphere where my participants were freely allowed to offer experience, knowledge and insights as to the questions posed by me as the interviewer. The participants were free to decline any questions and were advised they could offer as many answers as they wished; they were free to solidify their reasoning or thoughts as the interview process progressed. After every question asked, I allowed the participants to reflect on the questions, think through live examples from the research site they were actively working on to know how they would have reacted to the scenario. They were advised that they were not obliged to answer questions that may be outside their areas of expertise. Their understanding in the areas of stakeholder influence and construction project performance was critical.

In the conduct of my research, I made sure that the approach I used to raise my interview questions was clear, unambiguous and coherent. It never put the researcher off bounds and ensured that the researcher was able to relate freely. As I used a semi-structured interview, I was able to build my confidence as the researcher and this allowed the research participants not to feel pressured or constrained to answer questions in a certain way. That level of interaction facilitated easy conduct of the interviews. The semi-structured interview I used was very useful to my study as I was able to combine a form of unstructured approach to a form of structured approach to conduct my interview.

The unstructured approach allowed my participants to participate freely during the interviewing phase and allowed them to share their thoughts, insights and contributions without them feeling they have to follow the structured questions I have prepared during my meeting with them. That aspect of the unstructured phase of the interview allowed my participants to express their opinions freely and they were able to ask me questions especially those that were pertinent to my research questions. The structured component of my interviews on the contrary allowed me to engage with my participants (interviewees) in a more reliable, well thought out questions phase. This was particularly beneficial to me as the interviewer as it eliminated missing any key questions that would later become relevant to my research questions (Hollingsworth, 2005).

3.8 Action Research Design

This section discusses the action research design approach I used for the study starting from when the work-based problem was diagnosed, to gain understanding into the nature of the problem, to the action planning phase, through the implementation phase and finally, to the evaluation of the performance of those actions to specify learnings that can be put back to immediate use.

3.8.1 Diagnosis Phase

This is the starting phase of my five research phases. It describes the process I used to diagnose the problem and how the participants supported this phase of the study. It provided details regarding the interview process, the questions asked and how those shaped the action research design framework process (Patton, 2003).

Prior to starting this phase, I had to review the research questions and objectives again to ensure that the intent of my research study was clearly understood. I went through a number of project documents, that included our risk and opportunity assessment document (ROA); that advises on how project risks should be managed prior to selection and handover by stakeholders, at the request for proposal (RFP) phases, our authority and responsibility matrix (ARM); that specifies our project approval limits for different stakeholders, our subcontractor management database, that guides how subcontractor selections should be controlled and our GP1 project delivery manual of about 61 pages that provides an overarching information of all of our IMS systems and processes and requirements. I also reviewed the project scope document of the individual projects and gained adequate insights regarding the scope, objective and constraints on the projects.

The objective of reviewing these documents was to familiarize myself again with the policies and procedures governing our individual processes, understand where the gaps and non-compliances are inherent and used those to validate, justify and integrate into the data I gathered from my participants. This phase was important to me, as it allowed me to diagnose the problem, expand my own knowledge of the research problem and gain buy-ins and alignment from the stakeholders for the rest of my

research process. It also allowed me to reflect and discuss with the participants on the key themes of my research questions. This allowed me and my participants to reflect and decide whether or not the action research process should continue.

During this phase, I met with stakeholders 1, 2, 5, 6, 7, and 8 who are the primary users of our IMS processes; those identified as the frequent users of the IMS processes. These frequent users are those that are actively involved in the development and execution phases of the research projects. These research projects were those confirmed by senior management to have significant revenue generation and significant business impact on our overall business unit. Their project values ranged from $250K up to $2M. I reviewed the participant information sheet with these participants, advised them that their participation is voluntary and that they are free to withdraw at anytime without explanation. I discussed with them the statement of the problem, the current issues, the purpose of the research diagnosis phase, why they have been selected and how their information would be kept confidential and stored.

The questions asked focused on understanding the current issues within the research study, what the issues were, what's driving them, what steps do I and the participants need to take and how these actions would address the problem. There were questions on whether or not our current management strategies are working in addressing non-compliances in our IMS processes and reoccurring gaps in the stakeholder engagement process, questions regarding factors that influences these stakeholder engagements during project development and execution and how these engagements could be enhanced to improve our overall construction project performance.

This level of engagement with my participants was critical for my study (Hollingsworth 2005). The following specific interview questions were asked: What level of middle-level support should be employed to help improve project performance during construction? What are the typical challenges internal stakeholders face during project planning and execution, and why do these exist? In your view, how have management systems contributed to project performance? How are the management

systems addressing the issues we face during any of the project life cycles? Why do we have some of the challenges that drive project performance negatively even with well-structured management systems? Are these deficiencies solvable by any certain approach? What drivers can be implemented to correct any deficiencies? Why do you think they would work? How can we implement them? Are there certain requirements stakeholders can adopt to streamline the process of leading projects? What motivates stakeholders, especially external ones, during project planning and execution? What do clients really want? How can we meet their expectations? What can be done to drive project successes outside of the common approach? How do we get to do this? Discuss, the management strategies that can be adopted to identify the reoccurring gaps in existing processes, especially when starting up construction. Any learning in the process that can be shared from your experience? Can we effectively reduce losses by adopting these mechanisms to improve key performance indicators (KPIs)? How would you achieve this?

In the conduct of my research, I made sure, the approach I used to raise my interview questions was clear, unambiguous and coherent. One that never put the research participants off bounds and ensured that the research participants were able to relate freely. I used a semi-structured interview and was able to build my confidence as the researcher. This allowed the research participants not to feel pressured or constrained to answer questions in a certain way. On completion of my interview phase, the following steps were taken to conduct the thematic analysis of my interview data.

Step 1: Data Familiarization

The first step in my thematic analysis phase, was the reading and transcription phase. I read through each transcript thrice, for a total of twenty-four times to familiarize myself with the data gathered from my interviews. I took notes to make sense of what the data could offer and to have a clear understanding of some of the key information generated from each of the transcript (Ryan and Bernard, 2003). The ideas generated from this phase allowed me to know my data more closely in preparation for the coding. My primary focus at this stage was to make sure that that my transcription

process was detailed, clear, and has produced adequate information from the interviews conducted (Braun and Clarke, 2013).

Step 2: Generated Initial Codes

I developed a mechanism to organize my data through a systemic coding approach. The initial codes were generated using *Nvivo 12 Pro* qualitative software. The codes were based on actions, behaviors, ideas, concepts, terms, phrases, and keywords extracted from the transcribed data, that proved useful to my research study. Through this step, I was continuously asking myself, what are some of the key phrases, the key words, what are the participants saying under specific quotes, to understand the contexts in which certain words, ideas and phrases have been used (Ryan and Bernard, 2003). The goal was to make sure that the codes being developed were relevant and addressed my research questions.

During this process, I was looking for similarities and differences to justify why a particular code should remain or be discarded (Huberman and Saldana, 2014). This helped me to reduce the data into manageable size. I coded as much as possible from all the transcripts, generated several codes along the way and ensured that any code that do not prove useful to my research study were reviewed further, until such a point that all relevant codes used in the study either contributed or were of relevance to my research questions. After completing all the coding process for all the transcripts, I collated the sections of my interviews that fitted into each relevant code for record purposes.

Step 3: Searched for the Themes

In this phase, I examined the codes generated and grouped the codes that were relevant and fitted together to form different themes. The idea was based on selecting those codes that answered the same relevant information pertaining to the research questions. The development of the themes was carried out iteratively moving forth and back to develop different themes that were of the most relevance to the codes developed earlier (Braun and Clarke, 2003). The codes that fitted together were

grouped together and those codes that do not fit together were reassessed, as some of these codes were able to stand alone as themes themselves and I considered them so, where I need to (Braun and Clarke, 2003). In completing this phase, I had to critically reflect on whether the selected codes had some strong degree of relationship to the themes developed and if they were truly connected together. To check, I performed a number of comparisons checks and decided it would be beneficial to identify the quotes that provided these themes to see how they connected together. This helped me to maximize the clarity of my work. The idea behind this, was to make sure that only relevant codes were classified under the respective themes.

Step 4: Reviewed the Themes

During this phase, I reviewed the themes developed earlier to make sure they were highly relevant to the codes I had developed. This phase included reviewing all the data connected to these codes to make sure they supported the themes identified, and I also checked to make sure the themes made sense, and are aligned properly, with no contradictions. The essence was to make sure that any form of ambiguity or contradiction was captured and removed (Miles and Huberman, 1994). Once I observed that certain themes did not fit and could be placed into separate themes, I would reassign the given codes under that theme to a new theme. Once all the themes were well aligned and I was convinced by my judgement, that they were a true reflection of the codes under them, I reviewed the entire data set again to make sure that these representations were true for all cases (Braun and Clarke, 2003). When I was fully confident that no further analysis of the themes classifications was necessary, I proceeded to define the themes for the next step.

Step 5: Defined the Themes

At this phase, I reviewed, refined and defined what the respective themes were about. I made sure the description of each theme reflected the essence of each theme and what each theme represented. I made sure the defined themes were a true reflection of what it describes and were engaging as I would have expected it to be. I made sure that that these connections were clear and had visible relationships

with all of my defined themes. When I was very confident that all my themes have been well defined, I proceeded to the final step.

Step 6: Presented the issues in writing

With all the information gathered from the thematic analysis process and the final themes developed from previous steps above, I was able to provide a clear account of my results, presenting them under my findings chapter using the themes developed and I supported them with the relevant interview quotes gathered from the study (Miles and Huberman, 1994).

3.8.2 Action Planning

This phase began in October, 2019. In developing the appropriate action plans for the study, I adopted the Coghlan and Brannick (2014) action research cycle process and met with all of my participants to seek their inputs in developing the appropriate actions to adopt for the critical issues revealed from the first interview. The focus at this phase was to ensure that the appropriate actions were generated that would help to address the non-compliance issues and the gaps in our IMS processes, improve the overall project performance during construction and enhance the key performance indicators (KPIs) on the projects.

This action planning phase allowed me to develop a set of actions that I would use for the study. I refined my eight themes from phase one to six manageable themes and then met with all of my participants to discuss these six main themes and the issues for this phase of my study and this generated actions to take. These participants were critical to this action taking process as the actions taken had significant impacts on the projects they were involved with.

I scheduled face to face meetings with all of the participants to allow adequate interactions and reflections with the participants, and for them to freely share insights and ideas on the issues being addressed, as shown in my action research design process, Figure 9. This phase of my study was significant to me as the researcher as it helped me to gain clearer understanding of the participants point of view when it comes to the actions to adopt for the study. I started by seeking consent from

the individual participants, and when I received their consent, I conducted one-on-one meeting, discussed the present scenarios regarding profit and losses, budgeting, and gaps in stakeholder engagement and management, especially those on behavioural non-compliances and how well they can be managed under an improved integrated management process.

After the meetings had been completed and my data had been gathered, I took immediate steps to protect the data collected by locking them in a computer that is password protected and the computer was placed in a locked cabinet to protect the data and the confidentiality of the participants information. I took steps to validate the data collected through some of our archived reports on the performance of a number of the research sites. These included checking lesson learned reports and archived risk reports (Guba and Lincoln, 1989).

3.8.3 Action Taking

This phase of my study commenced in December 2019 and I met with participants, 1, 2, 3, 5, 6, 7, and 8 who were directly involved with the execution of the actions. Prior to doing so, I verified the willingness of these participants to support this phase of my study again, by seeking their consent approval again in a one-on-one interview meeting. I implemented the proposed actions and met with these participants to evaluate the actions taken. This allowed me and my participants to reflect on the actions taken to support the change process.

The goal of this phase was to make sure that the actions and/or evaluated actions taken were meeting the intended objectives and that the participants recognized how those may have contributed to their individual projects. It was also to make sure that the changes generated was influencing the performance of the projects as anticipated (Coghlan and Brannick, 2014). It was equally important for me to meet with them individually to remove any form of group biases that may arise from a group setting (Greenwood and Levin, 2017).

3.8.4 Evaluating

In this phase, I applied the generated actions and evaluated the performance of these actions in consultation with my participants. To address those actions that are still unresolved, I met with the relevant participants again to discuss, until all issues were addressed. In each action research cycle, I had interview meetings with my participants, reflected on the observations and each knowledge generated was put back to immediate use, with the learnings shared among the project team (Coghlan and Brannick, 2014).

There were instances where some of the actions taken did not satisfy the intended outcomes or was partly meeting the intended goals, in such cases, a re-evaluated action was adopted back to the project. With adequate evaluations and proper reflections, the learnings generated were implemented back by the stakeholders (participant users) on the projects and were instrumental to support the overall success of the projects. The concept behind reflections, action taking and evaluating is a fundamental requirement for any successful action research process (Coghlan and Brannick, 2014). Hatch (1993) argued that an action researcher should draw on knowledge of change, and then learning will take place. It presupposes that an action researcher, must reflect on a course of action and then take those actions to generate knowledge that is actionable to produce a change.

3.9 Research Quality Assurance and Ethical Considerations for the Study

Ensuring quality assurance requires a clear understanding of the aim of the research study and the strategies to evaluate the data. The ability to integrate multiple perspectives from stakeholders who are highly versed with the processes of the integrated management system provided a robust framework to support the quality assurance process of the research. Clendenin and Connelly (2000), suggested using field information sources via autobiographies, journals, field notes, letters, interviews and photographs that would allow a deeper reflection and familiarization into the data to be analysed. These were also collected during this study, and has been incorporated into several sections of this thesis to provide much deeper reflections into the research.

Also, one of the key ethics requirements of my study was on protecting the participants' names and their contact information during the data collection process. To ensure confidentiality of this information, and to ensure participants were free to withdraw without any disadvantage to them. I complied with these ethics' requirements, ensured total and complete confidentiality and the data collected were kept in locked cabinets. Only myself as the researcher, my supervisor and the second supervisor were given access to the data generated through this study. Ethics approval was received from the DBA Ethics Committee on June 5, 2019.

3.10 Summary

This chapter has presented a research methodology that had taken into consideration all the three different research assumptions: ontology, epistemology and axiology of the research under a singular research philosophy of pragmatism. The pragmatism research philosophy was selected as being the most suitable to generate actionable knowledge and produce immediate, practical learning to be put to immediate use throughout the data collection process (Huberman and Saldana, 2014).

This chapter also emphasizes that the study on stakeholder management has a significant contributory effect to the performance of projects within my organization and in addressing behavioural non-compliances. To support that, the research methodology stage allowed me to gather the required data by conducting semi-structured interviews. During this process, I selected the relevant participants that fit into the relevance of the research study, scheduled and conducted these interviews, generated several actions, took those actions in consultation with my participants and evaluated the performance of those actions in line with my action research design framework process.

3.11 Reflections and Learnings

Throughout the methodology chapter, I was able to gain great insights to the research study. This laid the foundation for the work ahead. The process of familiarizing myself with my data was quite beneficial as it allowed me to gain deeper understanding of my research data and provided a pedestal

to gaining valuable knowledge throughout the action research design process, while increasing credibility and eliminating biases (Greenwood and Levin, 2017).

This allowed me to reflect critically on my interview data and its transcription process up to the coding stage (Morley, 2007). During the coding stage, I was initially overwhelmed with the amount of data I had to code, but as I reflected through the process to generate my codes, I felt much more comfortable with the process. The use of qualitative analysis software *Nvivo 12 Pro* also simplified the process and provided clarity to the coding activities. I developed a high level of excitement knowing I was making progress with my work. Overall, I was able to make sense of the interview extracts pertaining to the coded sections and their relevance in the action research design process. The inductive analysis approach allowed me to appreciate the connection and relevance of each code to my specific research questions (Ryan and Bernard, 2003).

During the planning phase of the action research design process, the level of engagement and reflections with my participants heightened and the planning phase allowed me to discuss at lengths with my stakeholders, gain great insights regarding what appropriate actions could be taken to address the non-compliances and gaps in our IMS processes, enhance our project performance and improve our key performance indicators (KPIs). All through this research process, I was able to reflect on the reasonings and justifications behind the stakeholders' point of views and how those helped to generate the actions produced for the research study (Bourne, 2009).

Taking those actions and evaluating the performance of these actions offered me a new level of engagement with the participants and allowed me to critically reflect on some of the assumptions originally taken and made modifications where required. It became evident to me, why some of the initial actions taken may not have met the original goals. I evaluated the revised actions, reflected on them, went through several consultations with my participants and generated actionable knowledge to be put back to immediate use (Antonacopoulou, 2006). This level of engagement enhanced collaboration between me and the stakeholders, strengthened our business relationships and allowed me to develop as a scholar practitioner through this research process (Tenkasi and Hay, 2004).

CHAPTER FOUR
FINDINGS

4.1 Introduction

This chapter presents the analysis of the data collected in answering the research questions presented in Table 4 below while adopting the methods presented in Chapter 3 (Creswell, 2013). The analysis was based on the qualitative research creative process and aimed to make sense of the respondents' responses (Easterby-Smith, 2012). On completion of my data collection process, I proceeded with the action research cycles to analyse my data. This involved analysing my data using the five main steps of action research process discussed in Figure 9.

In my diagnosing phase, I transcribed the data from the interviews conducted and used the *Nvivo 12 Pro* Software by QSR International (a qualitative analysis program) to sort out relevant phrases or words that align with my research questions. I used the thematic analysis approach to extract the text meanings, reviewed the formulated codes and thematically analysed my data to develop my themes.

In my planning phase, I met with the participants again to discuss the key themes and issues and developed the appropriate actions to adopt for my phase 3 in order to increase credibility and eliminate biases (Greenwood and Levin, 2017). The focus at this phase was to ensure that the appropriate actions were generated that would help to address the non-compliance issues and the gaps in our IMS processes, improve the overall project performance during construction and enhance the key performance indicators (KPIs) on the projects.

In my action taking phase, I applied the generated actions and in my final phase, I evaluated the performance of these actions in consultation with my participants. To address those actions that are still unresolved, I met with the relevant participant again to discuss, until all issues were addressed at the end of my action research cycle.

Research Questions	Relevant Sections
What factors influence stakeholder engagement during project development and execution and how can these stakeholder engagements be enhanced to improve project performance?	Sections 4.2.5.1, 4.2.5.2, 4.2.5.3, 4.3.3.
What management strategies should be employed by mid-level stakeholders to address non-compliance issues and fix reoccurring gaps in our IMS processes?	Sections 4.2.2, 4.2.3.2, 4.2.4, 4.3.2.
How can the proposed action plans identified by the stakeholders be implemented to improve key performance indicators on construction projects?	Sections 4.2.1, 4.2.8.1, 4.2.8.2, 4.3.1.

Table 4: Research Questions and their Relevant Sections

4.2 Diagnosis

For this phase of my study, I formulated the appropriate codes using the Nvivo 12 by selecting words and phrases that connected with my research questions. A total of forty codes was generated. I then combined the relevant codes together and organized my data into eight different themes. The themes include; KPIs effectiveness, project delivery performance and reduction of non-conformances, management systems and stakeholder non-compliances, management strategies, stakeholder management and engagement, risk management, project profitability and project cost efficiencies. I have also represented these eight different themes and forty codes with the key issues as shown in Tables 5, 6 and 14. The relevant interview quotes for all the codes are shown in Table 5.

S/No	Themes	Codes	Issues
1	Factors that drive KPI effectiveness	• Understanding the project schedule • The cost to execute the project • Safety during execution • Quality of deliverables • Regular stakeholder stewardship	• Stakeholders understanding of the time allotted for project • The budgetary cost allocated to project is a contributory factor • Implementing the proper safety processes is vital

			• The quality of a project deliverable • Stakeholders should meet to steward regularly on assigned projects
2	Factors that influence project delivery and reduce non-conformances	• Have right people with right skills and experience • Have the right stakeholders to lead projects • Discuss the project objectives and the project scope • Meet regularly with the stakeholders • Discuss the processes early • Have proper sign offs on decisions taken	• Stakeholders with right skill set and experience can influence projects • Stakeholders who lead projects must be those that have the expertise to lead • Early discussions on the processes to adopt and the scale and scope of project is vital • Project manager must meet with stakeholders to discuss progress and address ongoing issues • Early discussions on the processes to adopt and the scale and scope of project is vital • Stakeholders should have proper sign offs on decisions taken
3	Management systems and challenges in the use of an Integrated Management System processes	• Lack of training to use the IMS processes • Lack of the right competencies to be able to use the processes effectively • Stakeholders trying to cut corners and attempting to accelerate a project faster than what it should be • Stakeholder biases set in because the stakeholders want to protect their own interest, project variances not captured early • Lack of alignment with senior management • Project gets more complex than envisaged and are not realized at an early stage	• Stakeholders lack of training on how to use the IMS processes • Stakeholders lack of the expected level of competencies to effectively use processes • Project variances driven early by stakeholder biases • Lack of alignment across management levels • Project complexity not properly thought through at an early phase

		due to a lack of coordinated approach	
4	Management strategies to address IMS process gaps and non-compliances	• Permit integration across all levels of stakeholders • Allow early engagement among stakeholders • Develop an efficient governance and assurance system • Seek senior management support on process changes • Build effective communications among stakeholders	• There has to be proper integration among all stakeholders • Stakeholder engagement must start early • Governance and assurance system are important to fix non-compliances • Alignment of management teams and building effective communication
5	Stakeholder management and engagement	• Depends on the type of project and the scale of the project in terms of the CAPEX • Project complexity and scope • High involvement of the project manager will help to determine which stakeholders will help the project	• The project scale and complexity can determine level of management and engagement required • CAPEX value of a project is a factor to determine the degree and extent of stakeholder management and engagement • Stakeholder management and engagement can be enhanced with the leadership and involvement displayed by the project manager
6	Risk management	• No clear understanding of the risks that are associated with the project • Resources required to deliver the project • The support system needed to deliver the projects, and unanticipated risks	• Risk not properly understood on projects • Resources to manage risks and mitigate can be an issue • Unanticipated risks present due to lack of a support system to identify and control it
7	What drives profitability	• Getting people aligned • Review the project cost opportunities early	• Stakeholders must be aligned to drive profits • Opportunities that can define the project

		• Know the risks and seek solutions to deliver the project • Not spending beyond budget at any time than expected • Have a proper set up at the beginning and do not exceed a particular threshold • Have each project analyzed • Find out the complexities of the project, what are the risks, what are the Technical, economic, economic, organizational and political factors (TECOP) • Run the economics and understand the profit expectations	success must be reviewed • Project work to be done according to approved budget • Set up a proper project framework that guides the project targets and thresholds • Stakeholders must analyze their projects • Understanding the TECOP requirements can improve efficiencies and reduce losses • Run project economics for project viability
8	Project cost efficiencies and loss reduction	• Need a leader that will drive and support initiatives and the execution of the project planning • Make sure everybody is on the same page on and comply with the rules from external stakeholders • Build effective communication and information sharing • Develop the proper cost estimate for the project	• A leader to support project execution such as a good PM critical • Proper alignment among stakeholders • Effective communication and proper information sharing especially as it relates to the estimation on the project is important

Table 5: Phase 1 Themes, Codes and Identified Issues

4.2.1 Factors that drive KPI Effectiveness

One of the key research questions was to understand how the key performance indicators can influence the performance of projects. The interview questions aimed to understand how these can help improve overall project performance. The responses provided by the participants suggested that KPIs can effectively improve project performance if there is a clear understanding of what the

external stakeholders want, and it emphasizes the four major criteria the client will base the KPIs evaluations on. These are: understanding the time to complete the project; the cost to execute the project, safety requirements during execution, and quality of the project deliverables. Participant #2, who is a project director, suggested that providing adequate resources to execute the project is critical. He further alluded that setting expectations with the external stakeholders (the client) and the users is critical. He gave an illustration saying:

"If I give you the money to manage a project for me. I will expect you to complete this project for me effectively. I will expect you to execute the project safely and of-course produce the highest level of project delivery and I also want the minimal issue that will negatively impact the delivery". -Participant #2

His response suggests that you will be able to provide all these to a client in order to be able to meet these minimum benchmarks and exceed the KPI criteria to prove a point to the client. In his insights he suggested that these are typically what the client will require to determine the value of the projects and to monitor the performance of projects.

"Delivering project KPIs, understanding the time to complete the project, the cost to execute the project by the external stakeholders and the safety during execution and the quality of your deliverable. These are the four major conditions; the client will evaluate you on, based on the initial agreement"-Participant # 2

"KPIs are effective because you want to remove the biased criteria to evaluate projects. You want to remove bias during evaluation. So KPIs are effective ways for management to make a good decision on the projects without any biased criteria. I haven't seen any latest tool that can be applied. I have not seen any tool that has been effective other than these KPIs"-Participant #7.

The arguments presented by participant #3 below regarding these KPIs also reflected that there has to be clear understanding of what each KPI requires for it to be measured using the known KPI criteria of cost, quality, safety and regular stewardship. He said:

"To make sure that that at the beginning of the project, people understand what the goals are, what you have to be. Then to measure your, your KPIs with regards to cost, quality, you need to meet to have a regular stewardship"-Participant #3.

4.2.1.1 Summary of Findings

The findings of this section emphasized the main drivers or factors that would drive KPI effectiveness. These include stakeholders understanding of the project expected deliverables, setting clear expectations regarding the project schedule and the allotted time requirements for the project, a clear understanding of the budgetary costs assigned to the project and properly implementing the appropriate safety procedures during execution to keep the project aligned till completion while being client focused.

This would require the understanding that stakeholders have a responsibility to meet regularly to steward on project progress and discuss on ongoing performance was considered critical to improving KPIs on projects. That proper stewardship and elimination of biases during the project cycle, including setting expectations, was considered vital if KPIs were to serve their intended functions. The study stressed the importance of knowing and applying these four major constraints: the time, the cost, safety and quality requirements in that order to deliver projects.

Other findings from this section were that KPIs are excellent benchmarking tools to provide a non-biased way of evaluating the projects and to help establish the appropriate criteria at the time of project inception. With that, there is a greater likelihood that mid-level stakeholders would meet the end users' expectations on delivery the key project requirements and in meeting the optimal quality of deliverables for the clients.

4.2.2 Factors that influence Project Delivery and Reduce Non-Conformances

Arguments presented from literature studies by Chau (1997), Heravi et al. (2015) and Nini et al. (2018) presented that poor management skills have significant effects on many types of projects because they are a reflection of the decisions taken by the project leaders during development and execution. Indeed, the arguments on poor management skills were considered to be impactful on project delivery due to a number of variables in the execution process (Chau, 1997).

The response from one of the respondents indicated that, in order to be able to deliver projects effectively to meet project targets, the right skills needed to be sought and the skills must be compatible with the experience. There is the indication that most critical element of that process is the project manager of the project who must be with the right skills and the right experience coupled with an appropriate behaviour to deliver such projects. In addition, the project manager being a critical leader of the projects may only be able to deliver the projects if he works collaboratively with the other stakeholders to deliver the project appropriately. This validated existing theory regarding working as a team to manage projects (D'Herbemont and Cesar, 1998).

"We need the right people with the right skills and the right experience and the right behaviour. Attitude is better that altitude. Number two, you need the right project manager. Who knows what he needs to do to deliver the project and he now need to have the right stakeholders that would be able to add to the projects? These things are not beyond the control of the project manager"-Participant #1-Project Development Manager

Participant #2 also provided additional insights into how to continually drive project performance. There was the indication that proper discussions and proper documentation of the review process through meetings and having proper sign-offs completed with stakeholders when such meetings are completed is vital. There must be an agreed consensus among these stakeholders while ensuring that the agreement is well documented through meeting notes. This process would allow the entire project team to align and invariably build the framework necessary to form a binding agreement and ensure the project is effectively delivered.

"Get a formalized approval. It may be as simple as sign off from a minute of meeting. Meet with them and discuss. Then you discuss the project objective, discuss the project scope because of the processes involved and where you will need them. Have all of them signed off on the decision? It may be as simple as minute of meeting so that everyone will sign off from that minute of meeting. That would become the binding agreement, what I consider a signing agreement that everybody understood, and everybody has agreed will provide the necessary support and tools to get back into the next phase". -Participant #2-Project Director.

The responses provided by participant #3 were the same as those of the insights offered by participant #2 on the need to take this meeting approach seriously to meet project expectations. The interview with participant #3 emphasized on the need to take these meetings and minutes more seriously in

order to facilitate effective project delivery. This was later corroborated with the daily field reports, meeting minutes and project responses filing on my organization SharePoint.

Other respondents such as Participant #7 also offered other ways to support effective project delivery. He argued that cost and schedule should not be the key factors to drive project delivery even when a project is over budget and over schedule. His argument was that this is potentially a North American approach to evaluating projects. His focus was that safety should be considered of utmost priority and should drive how a project is delivered and cost and schedule can follow. While the argument here suggests that safety plays a dominant role, he stressed that cost and schedule should still be in consideration.

"You know here, for most construction projects in America and in Canada, that seems like it's about getting the job done, even if it goes over budget and over schedule as long as you have a valid reason then it's considered okay. As long as you know, safety does not compromise and all of that. So, schedule and cost should not be a top priority. Priority is quality and safety. That's what I think. But again, in some countries, cost is the most challenging thing"-Participant #7-Project Coordinator.

4.2.2.1 Summary of Findings

The findings of this section emphasized the need to have adequate skills and experience to lead projects and the need for the project manager, most especially, to be at the forefront of those skills' justification. The findings revealed that stakeholders who lead projects must be those that have the expertise to perform in such roles, understand the project scope comprehensively and who at the early phases can establish proper discussions with other relevant stakeholders.

The findings suggested that a well-documented process is warranted to effectively deliver projects. The findings also suggested that proper meeting notes and meeting regularly to establish approval phases on the development process is vital to establish the documentation process. It laid emphasis on maintaining regular project meeting to discuss processes early including establishing project sign offs to support the decision-making process. These approaches as indicated by many of the participants were considered the most vital in delivering client expectations on projects.

4.2.3 Management Systems and Challenges in the Use of an IMS Processes

4.2.3.1 Relevance of Management Systems

This research aimed to understand what the issues were when managing and relating to various stakeholders, especially when those key stakeholders are the major drivers of the selection, evaluation and prioritization of projects. There was critical significance in dealing with risks and developing a mechanism to avoid delays in execution due to embedded risks not being captured early enough. Participant #2 suggested that if a management system is in place, then we can have a precedent on which the learnings can be based and that historical findings from the records of these projects will contribute to the overall management of the projects.

"I feel our management system has been very positive if they are adhered to. If you have management system in place they are built on history and on facts and based on the precedence that has happened in the past, they make sure there are no mistakes and so management systems have helped a lot to makes sure projects are very successful"-Participant #2.

Participant #5, however, suggested that while an integrated management system is adequate, there needs to be proper engagement of the project manager to ensure that the experiences of this leader can be reflected on the overall performance of the project. The assertion was that the influences and effectiveness of the project can be largely driven by this stakeholder and are connected to the factors influencing project delivery.

"This only depends on the different stage in the project. When the scope of project is not set? The project is not there yet. I think it requires a high involvement of project manager based on the experiences coming down from him, because when there is uncertainty in a project, the project manager at the site can at least have an impact"-Participant #5-Project Leader-Construction.

"Everything depends on the middle manager for the execution. Because they are the ones that ties the project to the needs of others up to the higher management. The integration is important, so you have to understand the needs of the management. Basically, tie the dynamic realities with the change"-Participant #5-Project Leader.

4.2.3.2 Challenges of Integrated Management Systems

The study revealed some of the challenges that the use of an IMS processes could pose. Participants #1, #4 and #8 offered insights into how it was important to ensure people are well-trained to use the processes they use. The lack of necessary training in the use of these processes during execution was considered one of the factors that impacted the ability to effectively follow the IMS processes. This gap, according to these participants, will affect the project's performance.

"One of the problems when you have these processes, what processes are there for people? When human beings are not properly trained to use all these processes; we're not getting the benefit from that. When you have people that are to use the systems, and they do not have the right competencies to be able to use the system effectively". -Participant #4.

"Maybe a little bit of a formal orientation for employees where employees may see it as a guideline and a tool rather than an obligation. This may be useful way to simplify the process for the user". -Participant #8

"You will not get the maximum benefits when you are trying to cut corners by accelerating a project faster than what it should be, you start overlooking some processes and systems that at the end of it, some of these processes will come back to hurt the project at the tail end of the project, so these are some of the challenges that you see on these processes". -Participant #1.

Participant #2 also indicated that the challenge is not being in tune with the project's tone and having fears about the project outcomes. The lack of understanding into the management processes to be applied will, in his opinion, allow biases to set in and, once biases exist, therein arises the challenge with working with the stakeholders.

"The challenge here is the fact that once they are not in tune with the early phases of it, it creates fear on their own end and once they don't understand the nitty gritty, their biases will set in. Once their biases set in, you agree with me everyone wants to protect their own interest. Stakeholders want to protect their own interest, have an element of trust and they want to remove the element of fear that will be impinged on them"- Participant #2.

Participant #5 also offered insights as to how to address this challenge by monitoring the effectiveness of the management system through a change process. Ensuring that the project follows through a well-defined management approach from the start and that the stakeholder leading that phase is well in tune with this approach during the construction phase of the project will yield good outcomes.

Understanding the execution approach and making sure it is well within the limits of the IMS system is vital.

"There should be a coordinated approach with system, and this should also change with the project"- Participant #5.

The same participant argued that, how the higher management sees the project and how middle managers see the project is very different; if they are not aligned, then it would create lots of roadblocks because they might not have the same detailed execution background, thus limiting their efficiencies.

"But as a middle manager, you must know, that you have to meet the expectation of the management. You must be aware of these expectations". - Participant #5.

4.2.3.3 Summary of Findings

The findings revealed that there are a number of challenges that stakeholders face in the use of integrated management systems. These include stakeholders lack of training to effectively use the IMS processes arising mainly from many not adequately trained in the applications of the management processes to support their work. Many of these training gaps result into diminished competencies of these stakeholders and was considered a major factor in the increased rate of non-compliances.

There were also the arguments from these findings that when stakeholders who are to be custodian users of the processes are driven by self motivated interests, they run the risks of not properly managing the processes well and subsequently creating a vacuum in the communication channels with senior leaders who could have corrected the gaps in the process. Such biases result into large project cost and schedule variances because, the stakeholders were more concerned with accelerating schedules to meet their own personal goals rather than strategic project objectives. This among others will increase complexities of the project and increase the likelihood of not capturing the project risks early due to a lack of coordinated approach in management of the project.

4.2.4 Management Strategies to Address IMS Process Gaps and non-Compliances

There was a good argument raised by participants on the management strategies that can be employed during the execution of projects to improve project performance. There were questions asked regarding what has worked, how effective they were and if it was possible to improve the project management process through the implementation of these strategies.

The arguments were that the complexity of projects would determine what level of management strategies to employ. The respondent suggested that the level of management support will be driven by the CAPEX value on the project. This means the capital expenditure of the project in question. The understanding is that a complex project with higher CAPEX would have larger management inputs than the one with lower CAPEX.

"So, the level of middle management support that you need to employ to improve project performance depends on the type of project, the scale of the project in terms of the CAPEX and how complex the project is. That's what determines the level of management you need as key stakeholder to help the project delivery"-Participant #1.

Participant #1 also suggested that stakeholders have a significant impact on influencing those strategies if they are all aligned on the project from the start and are ready to work together to address all misalignment issues.

"If you don't have everybody from the beginning lined up behind the project that is selected, ready to support it, then you have misaligned priorities"-Participant #1.

Participant # 1 also suggested that management systems encompassed varying management approaches that can be used to drive project performance. A number of these management systems require thoroughly monitoring the change systems and applying them effectively to drive out management gaps. This will ensure they are all well-integrated. These records and their monitoring approaches were also cross-checked through the existing IMS databases such as those presented in our global project (GP1) project delivery manual and reviewed at the research diagnosis phase. The goal was to re-establish some of the selection, monitoring and review process in place as part of the triangulation process.

"There are various management systems that are used in project performance, we have what we call integrated activity planning. There is what we call change management, you have risk management, resource planning, schedule management, cost management, cost control and there are many others which we call project management system. These are management systems and they are very important and very key. We have to apply these thoroughly and effectively. These systems are very key and they are very important. And you need them for project work to succeed. You have to apply these systems you know thoroughly and effectively. Otherwise, you have gaps". - Participant #1.

Participant #2 also suggested the level of mid-level management required during construction would especially be those managed by 2nd-tier mid-level management, but would be mostly influenced by the senior management and model of the organization.

"The good thing about integrated management system is that it allows all the potential management leaders to support your project from plan to execution. These leaders will be considered as internal stakeholders and as much as you have the internal stakeholders support, you are likely to have that of external stakeholders. For the most part, it also contributes to your project and provide you the resources and functionality to the success of that project. So, a well-defined integrated management is the right doctrine for excellent project execution". -Participant #2.

4.2.4.1 Summary of Findings

The findings revealed that the level of mid-level engagement is mostly driven by capital expenditure (CAPEX) on projects and needs to be well-established from the start through proper alignment. The study revealed that an integrated management system (IMS) is important as it helps to properly plan the project and allows the senior stakeholders to support the project. The findings revealed there are various arms of the IMS processes that must be well-integrated and improved for the processes to thoroughly work.

There was also the emphasis that people are currently not trained and needed to be well trained to use the IMS processes and the system itself. The findings also revealed that there should be a coordinated approach and clear understanding to avoid many of the challenges to improve project performance.

4.2.5 Stakeholder Management and Engagement

4.2.5.1 Stakeholder Engagement of Project Teams

The participants were asked questions relating to the integration of project teams and how stakeholders can be engaged to deliver the maximum output for projects. There were various responses that infer that engagement could be dependent on the level of priority placed on the projects being executed and that level of priority determines how the stakeholders would engage themselves to support the execution of the projects. One of the participants responded this way:

"Typically, the reason why they face this problem is because it's not everybody that have same vision and the same objective, so at times in an organization that you have various projects. Some people think some projects should be given more priority than others, because of that some categories of people prefer another project, they don't tend to support the project selected, you know, so they see that's not a project the organization should recognize. When you have that from the beginning, it's a problem"-Participant #1.

Another participant #6 argued the same way as participant # 1 in his justifications on why the participation among stakeholders was vital, regardless of the priority of the projects. He argued that is not just about knowing what you need, but more about focusing on what they need from you. He further argued that, when stakeholders are not working in collaboration, then they create a gap in the process as every stakeholder must go across the organization to see who needs help and support them in their own role to deliver the projects. This invariably suggests that early engagement between the stakeholders is very likely to help the project to succeed.

"You need to try to integrate across all levels of stakeholders. And that means it's not about knowing what you need, it's about what do they need from you". -Participant #6.

"As a project manager or as a senior manager, or as in middle management level, you need to know when to help and you need to know where you need to receive help. These are the things in modern day project delivery, whether as a project manager, or as a team member, is not about I have done my own and he has done his own. We need to go across the organization to know who can help the other person deliver his own. If we don't, then what you have delivered will not take the project to delivery". -Participant #2.

4.2.5.2 Strategies to Adopt Stronger Stakeholder Management

Research question #2 was also centred on developing new strategies or finding out what strategies would be suitable to ensure noticeable gaps in the integrated management systems are eliminated and stakeholders can be engaged during the project life cycle. The participants were asked to provide insights into what those strategies could be. There was the proposition that an assurance strategy is vital.

Participant #2 suggested that any organization that has a group management system and practices must be able to develop efficient governance and assurance systems that will help the organization to properly monitor and manage the process. The systems are to be developed because of their ability to ensure that the relevant deliverables are being complied with, to support the decision making and authorization phase.

"For any replicable organization, that has a group management system and practices, one of the new goals is to develop a very efficient governance and assurance system. What does that mean. The assurance and governance system is one that will ensure the relevant deliverables are being complied with"-Participant #2.

The responses provided by participant #2 were not focused on an independently-led approach, suggesting it will not be an approach that can be led by a single individual, but by a collective, utilized by all who may need it. He also asserts that the governance system should not feed on the IMS processes but work independently to be a control in place to provide oversight for the system. This set up would allow proper planning and implementation and reduce non-compliances and noticeable gaps in the system.

"When you have these systems in place, it helps the management system to flow and in fact for the most part is independent of the senior management system, because it is a systemic thing, it does not depend on the individual leader, it can be utilized by others who may need it. My advocacy may be to deploy a governance system that will be independent of any system such that the projects can be executed, as management will come and management will go. We must live in a systemic environment such that we are able to develop a proper project planning and implementation process. We know that management engagement, you know, is more like the stakeholder engagement as well, which will in a way build client confidence". -Participant #2.

Participants #2 and #4 provided a much a deeper insight as to why a management system needs to be reviewed and endorsed first by management before being rolled out. He argued it must be unambiguous and with clear guidelines and strategies on how to execute the project. The stakeholders need to understand it and must set clear expectations, following up through regular meetings. That integration can be all-encompassing, including both internal and external stakeholders.

"Management has to endorse that system and endorse the project, management needs to understand why it is being done, and why it has been done. They must give clear guidelines on what the expectations are and then there is a regular meeting. Follow up meeting regularly to discuss the status of it". -Participant #2.

"Before a project can take place, stakeholders have to meet together, come up with strategies on a process and procedures in order for them to tackle the project. When they come up together, to tackle, they know if there is a way of minimizing costs, optimizing project performance in other for the project to be completed successfully and in order for them to meet the specific time that was agreed to."-Participant #4.

4.2.5.3 Stakeholder Influence on Projects

The research study also evaluated the level of impacts and influence stakeholders have on project execution and delivery and how well it could be structured to ensure that the performance of the projects is sustained, especially on larger projects. One of the arguments put forward by participant #2 was that the senior management of the organization cannot stay aloof (Horn, 2000). They must connect with the project. For most firms, senior management stay independent of the project process, but this participant argued that they cannot do that while also expecting the best outcome. He indicated that senior management must be available to provide support, be accessible and provide oversight for every dollar spent on the project that has a higher tendency of impacting the project's success. He cautioned against the risks of having higher cost overruns if such senior level connection is absent.

"Senior management must connect with the project and must strive to meet all these things. The senior management must be available to provide support. They must be accessible to finish everything without making progress beyond the plan. Every dollar you spend, and every extra day you spend, will impact the success of

the project. You will have several overruns and you will have lots of overruns and you will not meet the objective of the project"-Participant #2.

The understanding is that senior management influence can have a positive impact on the project and stakeholders can have a higher chance of efficiently executing a project. In other words, an efficient project execution is possible if you engage senior management early enough and provide necessary information to be able to acquire their buy-ins. Most importantly, the ability to be able to remove the fear from the domain and with the risk being minimized, increases confidence in what the project stakeholders are doing (Heravi et al., 2015).

In the same light, participant #3 also argued that:

"First you have to deal with the objectives of what project is, what is it you want to get, do we have the different stakeholders that will be involved. Starting from the people that are going to be directly involved with the project and then all the other parties that could be impacted"-Participant #3.

4.2.5.4 Summary of Findings

The findings stressed the importance of stakeholders having a similar vision on the project and aligning their focus on the same objectives. Priority preference by some stakeholders should be avoided and any project being executed should be supported. There was also the emphasis on proper integration and collaboration across the team if the projects are to be successfully delivered as one. This was suggested as one main management strategy that should be in place for an improved system. There was also the need to have a governance system as an independent approach to support the existing management system and to act as a buffer to develop a proper planning and implementation process.

The governance approach was to ensure the system works and that senior management are supportive. The onus is on the key stakeholders who drive the project to ensure that the understanding exist, and that senior management have a positive influence on the project, in order to create a higher chance of success. Also, of note is that any management system implementation must be reviewed and validated

by the senior management leaders in order to ensure there is accountability across all facets of project execution.

4.2.6 Risk Management

4.2.6.1 Managing Risk Issues

Participants were asked how critically they could address risk-related concerns pertaining to project execution. This was considered pertinent to support research question #2 on how the management strategies would ensure project performance can be sustained. Participants argued that it is possible, if the stakeholders can clearly define assumptions and understand the limitations of the project. They must understand the cost risks, issues and mitigation measures for the project which are potential avenues for these risks. In Table 10, an overwhelming number of participants (participants #1, 2, 4, and 5) of the study provided clear responses as to what these major issues are.

Participant #1 suggested one of the various risks associated with project performance is the support system that a project can have when delivering projects, in terms of the availability of the resources to lead the project through its life cycle. He suggested a lack of expertise and authorities can affect project delivery mechanisms and impede project delivery.

"What are the risks that are associated with the project, what are the resources required to deliver the project. You know, so those are things that challenges what you face. Also, what are the support systems that you need to deliver the projects in terms of the subject matter experts, technical authorities, you know, depending upon the disciplines and scope involved in the project delivery"-Participant #1.

Participant #2 linked it to the gaps in getting buy-ins from key stakeholders and the difficulty that those early buy-ins may cause. His arguments were that, when the support and buy-ins from the stakeholders occur without fear, in what he considers an intrusion to the domains of the stakeholders, then there is ease in being able to develop the appropriate mitigation measure to address all risks issues on time that can impact the project execution cycle.

"Once that element of fear is taken away, what I consider intrusion to their own domain and once you are able to mitigate and get early buy in from them, then you will get their support. The mitigation measure for

that is early engagement"-Participant #2.

Participant #4 argued during the interview that, while it is important to obtain buy-ins from the stakeholders, it is equally important to ensure that they were ready to release and share information that can positively influence a project performance. His argument during the interview was that the sharing of information or having information disseminated would allow all necessary information to have been considered and taken into consideration when managing the project.

"I think the most key important factor is the information release by people or technical team stakeholder, so, things can be decided better. Sharing of information or sharing or having that information disseminated appropriately is key. The risk is always for the information that we don't have and if we have taken them into account". Participant #4.

Participant #5 supported the arguments and insights put forward by participant #4 and argued that, while it was important to disseminate information on time, it was also important that such information, when it comes to managing complex projects, be disseminated at the beginning of the project since doing so would allow early anticipation of any project risks.

"That part always exists and it's a high responsibility for the project stakeholders at the very beginning. That's why we do risk analysis at the beginning. There are two factors here. One of the risks that we didn't anticipate, and they can happen in the project and vice-versa. So, we have to put a contingency for that". -Participant #5.

Participant #8 argued that if a risk is not well managed, then the project could tend to generate low profits and will be considered a bad project. This signifies that a well-managed project would have a properly defined strategy for managing its risks.

"When do you evaluate the risks versus your profits? If it is very risky and doesn't give you a lot of profits, then is a bad project. Thus, if the risk is high and profits is low. That's bad project". Participant #8-Project Manager.

4.2.6.2 Challenges Faced by Stakeholders during Risk Management

The findings here suggested that challenges would have to be thoroughly managed during risk management. Not doing so would generate loopholes through which many of the non-compliances, schedule variances and cost impacts arise, and this jeopardizes the overall project outcomes. Their

arguments were that, if the challenges in projects are identified but are not well mitigated, there is a tendency that the approach used to mitigate the problems may not meet its intent. The participants suggested that every viewpoint should be welcomed at the early stage of this process as that would allow timely engagement and consultation to develop a robust way of dealing with the challenges.

"There are different challenges as you would know and some of these challenges may be difficult to improvise. It will require gaining support from the different stakeholders. Everyone has different viewpoints and some think in terms of how the process should work or the process should be tried out or executed. Should you keep it, how should you plan". -Participant #8.

4.2.6.3 Summary of Findings

The findings from this section concluded that, if the stakeholders can clearly define the assumptions and understand the limitations of the project properly, then any issues can be effectively averted. There must be regular discussion on the impacts of the risks and a clear understanding of all the risks implications, issues and appropriate mitigation measures for the project. The findings also suggested that there must be clear dissemination of information and that the information must be disseminated early enough to ensure it creates an avenue for the stakeholders to be able to properly evaluate the risks early in the project. There was also the indication that, when the challenges are identified, the approach to mitigate them must be carefully mapped out and planned by all stakeholders, welcoming multiple viewpoints within the project team as to how to deal with the challenges. Not doing so may suggest to project sponsors and upper management that there are not enough support mechanisms in place to support the effective delivery of the project.

4.2.7 What drives Profitability

4.2.7.1 Drivers of Profitability in Project Execution

One of the primary research objectives was to generate actionable knowledge in which construction projects are executed in compliance with an improved integrated management system, with the primary goal of increasing profitability (Tenkasi and Hay, 2004). The study revealed key drivers are

necessary to achieve that. All construction projects would have to be governed by these consistent drivers to ensure the organization remains profitable and sustainable. Some of these drivers are understanding the operating income or EBITDA requirements, knowing both the risks or opportunity requirements and being familiar with the economics of the projects. The insights from the participants were quite enlightening on this. As one of the participants put it:

"I think in every project; the first thing is what is the outcome expected? what is the profit, what is the economics? At a particular point in the project, notably in the beginning of the project, you look wide, you look at opportunities, you look at your risks, you look up for solutions to deliver the project". -Participant #1.

These arguments were focused on stakeholders paying attention to the key things that are necessary to drive the project in line with the integrated management system. This, in the view of Participant #1, will move the project forward and sway it away from the stage of divergence to the stage of convergence (Olawale, 2010). The assertion is that, if you do not protect the profit value, there is a tendency to start making changes all over the place, and push the project into cost overruns, because the project will then have to spend more money than anticipated. It is therefore important to check the metrics and be sure the project has effectively run its economics to increase profitability.

"We can't spend any more time than expected. So, these are some of the things that are very key, and another thing is consistent benchmarks. You need to benchmark your progress with was at that stage. What does it look like? What were the project phase, how do we overcome the challenges, what are they, you need to know, and you must consistently run your economics, check your metrics, and ensure the investment ratio is protected"-Participant #6.

4.2.7.2 Profitability Influence on Project Performance

The ability to influence profits stems from the ability to think through the cost impact analyses at the beginning of the project. Participants #1 provided a basis in which that level of cost impacts can be easily monitored to determine the complexities of the project. This was identified as TECOP, namely "Technical, Economic, Commercial, Organizational and Political" factors that are likely to impact the project.

"I think at the beginning of every project. Each project needs to be analyzed, what are the complexities of the project, what are the risks, what are the TECOP"-Participant #1.

The argument presented by this participant was that, when those five spectra are clearly defined, then one can easily determine the processes and systems risk mitigators, to deal with them. TECOP helps to build the framework needed to deliver the project profitability.

"Because no two projects are the same, because the TECOP you see on paper would always be different from one project to another, you cannot generalize projects. You cannot say this system work for one another. You have to define system and purpose with the risk that you observe"-Participant #1.

Participant #4 also suggested that project economics need to be run to determine what level of cost impacts may be expected during the execution phase and that this should be embedded into the management system.

"If you run the economics and find out, oh, 20% possibility or success or return on investment, or you say 30%. Then the next question will be, is that a cut-off point. Is this what we need to push the lead. If the answer is no, then we need to re-evaluate whether it is still worthwhile continuing the project execution process as the ultimate bottom line is the profitability and when the organization is not making the money they should be making, then this is a problem that needs to be fixed". -Participant #4.

4.2.7.3 Summary of Findings

The findings in this section on profitability influence on project performance emphasized and stressed the importance of running project economics from the start of a project to determine project viabilities. One key factor established to support this process is the TECOP, in which there is a full understanding of technical, economic, commercial, organizational and political factors that would help avoid generalizing projects so that a project can be holistically evaluated to determine if it is worthwhile executing. There were the findings that proper benchmarks are needed in order to properly run the economics and ensure the maximum profitability is achieved. The study suggests that these factors will be major influencers on the profitability of the project.

Conclusively, the findings suggested that one cannot use one economics to determine the profit performance of another project, as no two projects are the same. Also, to drive the project in line with

an improved management system and to move the project forward requires a move away from a divergence phase to a convergence model using aggressive financial monitoring.

4.2.8 Project Cost Efficiencies and Loss Reduction

4.2.8.1 Factors Driving Project Cost Efficiencies and Reduction Losses

The study wanted to understand what factors would help to drive project efficiencies in support of the primary objectives of the study. The participants were asked what steps they would take to ensure these factors are managed properly to improve project efficiencies. Participant #2 suggested one of the ways was to understand what is needed to execute projects is through effective leadership. The availability of leaders that will develop initiatives, foster appropriate culture and champion the delivery process in order to meet the project objectives. Through this mechanism, he argued an effective project management system would be developed that will drive project execution and enhance profitability.

"You need a leader that will drive and support initiatives and the execution of the project, if you don't have the right leader, you will barely succeed. For me really, to drive profitability, project execution has to be prioritized by senior leaders. In view of that, you need an effective project management system and you also need the right set of leadership that will drive project execution to achieve its aims and objectives and hence profitability. And we also need the right cultural attitude in the organization". -Participant #2.

The responses from participant #3 indicated that human factors have a deep influence on project performance. There must be proper delegation of roles and responsibilities on projects to experience the best output from projects. The stakeholders must be accountable and must do so such that the key stakeholders can know what is expected, in order for the projects to line up with the key objectives.

"I think a lot of this has to do with the human factor, the behavior of the people is very important. You have to hold people accountable. You have to let people know what is expected of them. Every decision you make, you have to involve people so that people know what's expected of them in terms of follow up."-Participant #3.

Participant #4 also suggested that, for projects to work according to plan, contractual factors can influence it. He argued that, when contracts are well understood by stakeholders, then the project performance can work according to plan.

"I think the best motivation is basically awarding more contracts to a particular stakeholder to take all that role. Because one, if you have been awarded a contract then you do it to the best of the company you're working for, the motivation is for the client to give you more contract". -Participant #4.

Participant #6 related this to how client influence can be a factor to drive the performance of projects and in turn contribute to impacting the bottom line of the project. The assertion was that the client cannot say a project has been properly managed unless of course they get the best return for their money invested on the project.

"The client wants to get the highest profits and the best of the best of money they spent. They give you a contract, they want an excellent job because they believe they gave you the best and they want the excellent contract. We have to impress them by doing a great job and following up on what they want and by doing exactly what the contract says". -Participant #6

Another factor that was identified in the process as a factor to influence project performance is having project leaders who are knowledgeable enough to lead the project. The understanding of the project manager plays a vital role in managing the cost, schedule, safety and quality of the project. The arguments presented here were based on the premise that the project manager provides what she calls good insurance for the project to be executed. The participant argued that any gaps in the process can be better managed by this key stakeholder in order for the project manager to be able to close the gaps and make the projects successful.

"Project Manager are the final person you know, they get questions from a client, they need to review the project and know the costing versus budget and the mark ups and on top of everything they have to make sure there is a good insurance/subcontract for the project. They must take time, manage, and read the contract. If there is any gap with the manager and the subordinate, they have to clear those gaps instead of letting it go". -Participant #6.

4.2.8.2 Issues to Manage during Executions

The study aimed to understand what the major issues to contend with were, in other to manage project issues during execution as it relates to the integrated management system and how those gaps can be properly addressed before the complications of the project start. Participant #5 asserted that, if communication and coordination matters are not well managed, then there is a tendency to cause a

breakdown of the information flow for the projects. The effect of this is a schedule breakdown in communication and an impact on the project budget (Jensen et al., 2013).

"Challenges in projects; I think the main challenge is pretty much the lack of communication and coordination. That's the main thing. Because when lack of communication happens, the information is missing and when the information is missing, a part of the construction side is affected. And that part of construction side affected is the schedule, the money and the whole project". -Participant #5.

On the same note, gaining alignment across the team is vital and should be well managed during execution. Ensuring stakeholders have a clear and concise definition of requirements from the start with regards to scope requirements in order to gain early confidence to avoid discrepancies among the team during the execution phase of the project is important. The quote is:

"One of the major challenges you face during project executions are basically gaining buy-ins from stakeholders particularly clear and concise definition especially with regards to scope definitions from the project planning group to all relevant stakeholders with regards to gaining early alignment and agreement. Alignment with the client and discussion"-Participant #6.

4.2.8.3 Summary of Findings

The study revealed that one of the best ways to ensure project efficiency is through focal meetings where stakeholders would meet and review critical issues, discuss the key objectives, tools and processes and gather the support needed for the major phases of the project. There was the understanding that the human factor is key to influencing project outcomes and necessary to understand how to drive profitability. To do this, stakeholders have to be supported by right leadership who can leverage effective communication to surmount these challenges. These findings supported proper management of these issues. It revealed they can be surmounted if there is clear understanding of contractual obligations by stakeholders who are able to disseminate the information promptly regarding project delivery and profitability.

4.3 Action Planning

In developing the appropriate action plans for the study, I adopted the Coghlan and Brannick (2014) action research cycle process and met with the participants to seek their inputs in developing the

appropriate actions to adopt for the critical issues revealed in Table 5. In doing so, I made it clear in the meetings held with them, that the focus was to share ideas, relate together as a team and proactively address all the non-compliances and gaps that is affecting the performance of our projects without bias (Greenwood and Levin, 2007). Hence, the participants were allowed to freely share their insights, reflect on their past experiences and recognize that their contributions will ultimately help the construction division develop an improved management system that will serve the interest of all the stakeholders and increase the profitability and sustainability of our organization.

The approach research framework process shown in Figure 9 was quite helpful in developing the action plans necessary to take the research further into the cycles of processes needed to generate the change for the organization. The ability to proceed through the cycles required building a good relationship with the stakeholders' that is respectful, fair and considerate of divergent thoughts from each research participants (London and Swain, 2015).

After the development of my initial 40 codes and 8 themes from the transcribed data using Nvivo 12 software, as shown in Table 5. The development of these 8 themes and 40 codes was based on the premise of using relevant themes that aligns with my research questions. I reviewed these themes and refined those themes that are closely related together in addressing the primary research questions. Themes 1 and 2 and themes 3 and 4 fell into this category. Themes 1 and 2 provided a clearer understanding of my research question #2 and #3 and themes 3 and 4 when combined provided a clearer insight to my research questions #2. The central question was to ensure each individually refined theme provided a rich basis for every aspect of the data analysis phase, made significant sense and is rooted into the objectives of the study and the research questions (Braun and Clarke, 2013).

This approach helped me to identify the changing relationships in the process of my data analysis. The results of the actions generated from the six main themes is shown in Table 6 below.

S/No	Themes	Actions
1	Factors that drive KPI effectiveness and influence project delivery	• Track cost reports weekly and bi-weekly and develop a comprehensive cost report matrix to monitor KPIs with specific stakeholders • Schedule follow up review meetings and ensured IMS forms are signed off and archived into Global SharePoint folders as a record of approvals
2	Management processes and strategies to address gaps and non-compliances	• Hold an audit review of approach to address non-compliances on November 12, 2019 • Schedule an alignment meeting with stakeholder on non-compliances and identify training deficiencies early • Schedule financial management tracking meeting (FMT) on February 24, 2020 to discuss ways to monitor project variances • Develop a Construction Project HSSE Planning Process Flow Chart • Discuss with operational managers about monitoring and controlling project gaps and stakeholders' non-compliances in the December 5, 2019 management stewardship meeting
3	Stakeholder management and engagement	• Complete the Authority Responsibility Matrix with the appropriate stakeholders to gain alignment • Communicate with stakeholders in project weekly meetings regarding CAPEX values • Assess project complexity to ensure projects are matched with skill sets of mid-level stakeholders
4	Risk management	• Complete and monitor the risk matrix process • Complete a risk matrix review for projects at start, at 50% and at 100% project phase
5	What drives profitability	• Set up the FMT tracking process for the projects to capture profit margins early • Monitor project cost complexity matrixes to evaluate variances • Discuss with cost analysts on external costs and internal costs changes on a weekly basis to address areas of losses • Track profitability reports using cost software; HeavyBid to evaluate estimates and HeavyJob analysis reports to track cost variances on a weekly basis and monitor EBITDA early

6	Project cost efficiencies and loss reduction	• Review score-card reports of stakeholders assigned to designated project • Meet with contract team to provide feedback received from IMS external audits completed • Monitor project cost complexity matrixes to evaluate variances

Table 6: Phase 2 Actions Generated

4.3.1 Factors that drive KPI Effectiveness and Influence Project Delivery

For the FMT tracking, I met with participants #1, 2, 5, 7 and #8 who were critical stakeholders on the Retaining Wall Rehabilitation project; project site #1, to discuss the issues regarding the cost variation and biases during the execution of this project. This was regarding how the project team had to control the project cost creep against the allotted budget for the project. Participant #7 talked about this when he mentioned about removing bias from costing during evaluation.

"KPIs are effective because you want to remove the biased criteria to evaluate projects. You want to remove bias during evaluation. So KPIs are effective ways for management to make a good decision on the projects without any biased criteria. I haven't seen any latest tool that can be applied. I have not seen any tool that has been effective other than these KPIs"-Participant #7.

This participant feedback was helpful and led to the development of a comprehensive cost matrix used to track project costs more effectively including the building of a baseline schedule and working schedule for the project. I took this initiative and developed a comprehensive weekly cost tracking report shown in Table 7 to provide a way for stakeholders to monitor the project KPIs for project site #1.

At the initial phase of the project, the budget realized a decline of about 4% overrun on weekly spends but was averted after taking steps to determine where the huge spends were coming from. I discussed further with participants, #1, 2, 5, 7 and #8 who were directly involved with the project that the selected contractor for project site # 1 was overspending on the labour and equipment budget amounts and had not taken into consideration the required labour cost requirements from the start of the project. I took steps to correct that by meeting with this designated subcontractor and presented the

financial management tracking (FMT) costs shown in Table 7 as a measure of the cost performance on the project. The argument was to control the subcontractor labour costs and for this subcontractor to use that as a measure to reduce the overall spend on this project site. I requested the subcontractor manager send me a weekly and monthly cost breakdown for my review. I then followed up with the subcontractor manager to discuss the findings to cut down the labour costs. The subcontractor manager was pleased with this and welcomed the initiative. This process allowed proper allocation of the required labour for the remainder portion of the project work. This action was reviewed and agreed with other participants and Table 7 represented the agreed upon format for the other project sites #2, #3 and #4. It helped to build a cost tracking framework to monitor KPI effectiveness on other sites.

Code	**Phase**	**Current Amount**	**Project to Date**	**Budget**	**% Complete**
1000	Pre-Construction Planning	14,335.33	47,333.58	47,462.06	99.73%
2000	Contract Administration	1,105	2.323.75	7,670	0.00
3000	Construction Execution	0.00	0.00	150,577	0.00
4000	Post-Construction	0.00	0.00	12,461.16	0.00
	Total	**15,440.33**	**50,066.58**	**232,625.22**	**27.41%**

Table 7: Financial Management Cost Tracking Framework for Project Site #1

Table 7 showed the measure of the percentage of work completed versus the budget spent on project site #1 and was deemed as a suitable measure for tracking the earned value of other projects sites including as a metric for evaluating KPI effectiveness at the site. The resulting percentage served as a basis to determine areas where spending may need to be curtailed. In my follow up review meeting with the participants, Table 7 was provided as an acceptable cost tracking approach to track cost spends during the planning, contract administration and during construction execution and served as a basis to evaluate the performance of the project on a weekly basis.

This FMT cost tracking mechanism as agreed with the participants provided an acceptable basis to show the level of cost inclusions and exclusions on a given project based on percentage of work completed. This also enhanced engagement and discussions with the client #3 and #4 on a weekly basis. This action was acceptable and used it as a metric during the cost follow up review meeting on a weekly basis on other project sites.

On November 26, 2019, I engaged the project team and developed a working schedule along with the original baseline schedule to depict where progress was made on the schedule performance for the respective project sites, starting from project site # 1. I then compared this difference with original baseline schedule developed for each project. I started the implementation on project site #1. After successful implementation of this metric on project site #1, I applied it on project sites #2, #3 and #4 and observed that the metric provided an effective way to track schedule variances. Project site #3 however, showed signs of unsatisfactory results with both the schedule and cost monitoring attributed largely to gaps at the bidding phase of this project. I followed up on this and met with participant # 6, who was a critical project lead at this site on February 24, 2020 to discuss these gaps and the following actions were generated to reduce gaps in project site #3. Review contractor submittal early and get management approval. Prepare and submit weekly summary reports including weekly progress concerning (schedule and cost). Track issues raised promptly and address in weekly meetings, including any potential changes to the project scope or budget, and provide a forecast look-ahead for the following weekly meeting. Promptly review progress invoice, claims, change orders including any recommendations provided by the client stakeholders.

4.3.2 Management Processes and Strategies to address gaps and Non-Compliances

My research had a key objective to reduce non-compliant behaviour identified from the research diagnostic and planning phases. It revealed that stakeholder management required proper engagement and involves building and monitoring stakeholder relationships to enhance project success (D'Herbemont and Cesar, 1998). Research studies also showed that relying on a single stakeholder input, known as the "*Magpie syndrome"* would be inadequate and could result into a significant gap

in the project execution process because it would not allow proper integration of other stakeholder inputs in the project delivery process. To avoid this, D'Herbemont and Cesar (1998) asserted that all stakeholders must be properly engaged and aligned to achieve a common objective. Moreso, participants argued that lack of training is an impediment to achieving project excellence in the use of an integrated management system processes. A limited training would limit the maximum benefits a project stakeholder can derive from a management process. This was argued by Participant # 4 and #8 as shown below.

"One of the problems when you have these processes, what processes are there for people? When human beings are not properly trained to use all these processes; we're not getting the benefit from that. When you have people that are to use the systems, and they do not have the right competencies to be able to use the system effectively". -Participant #4.

"Maybe a little bit of a formal orientation for employees where employees may see it as a guideline and a tool rather than an obligation. This may be useful way to simplify the process for the user". -Participant #8

On the basis of this finding, I met with our IMS audit review leader on November 12, 2019. Participant #8 was invited to the meeting. Participant #8 was selected as a major stakeholder for project site #4, the Red Dog Mine Operations at the Teck Red Dog mine. He was my deputy project manager and reported directly to me. His input was considered important to help me with identifying the IMS training requirements adopted under his leadership under project site #1 and how that could be reflected on project sites #2, #3 and #4. The inquiry required inputs that would help people take the IMS processes as a guiding tool rather than see it as an obligation. A training to address the non-compliances on the part of the stakeholders was critical to effectively manage projects and should be actionable.

In the meeting, we discussed whether or not some of the non-compliances i.e. non-approved subcontractors usage, project deliverables not reviewed before submission and a lack of a project health, safety and environmental plan can be addressed by taking steps to develop a flow chart to address these issues, since many of these non-compliances were attributed to a behavioural pattern by the participant stakeholders at the project sites #2, #3 and #4. He appreciated the discussions.

At the end of the meeting, we developed a Construction Project HSSE Planning Process Flow Chart as part of a mandatory training required for project stakeholders. Refer to Figure 11. I then discussed with operational managers about using this flow chart to monitor and control other subsequent non-compliances in our December 5, 2019 management stewardship meeting with the operation managers.

The flow chart acted as a training guide to our project execution framework especially around the development of key deliverable such as an HASEP (for medium risk projects) and HSSE plans (for high-risk projects). It re-emphasized that project manager who leads must have been approved by a regional manager, has the proper knowledge acquired through their successfully completion of our GP1 global project delivery training and the project management "PM 24" training course initiated by senior management.

As part of the action process, the HASEP conditions stipulated that; HASEP must be developed prior to visiting a site or beginning a field work and must have been approved by the project director (PD) and reviewed by a Health and Safety Coordinator (HSC). Client safety training and the training specific to a particular job task must also have been considered. Participant from other project sites #2, #3 and #4 agreed that all project personnel had to sign and must signify that this training requirement had been completed before engaging in a project role. These were communicated back to the external stakeholders on March 10, 2020 and the approved training checklist developed in the course of this action is shown in Table 9.

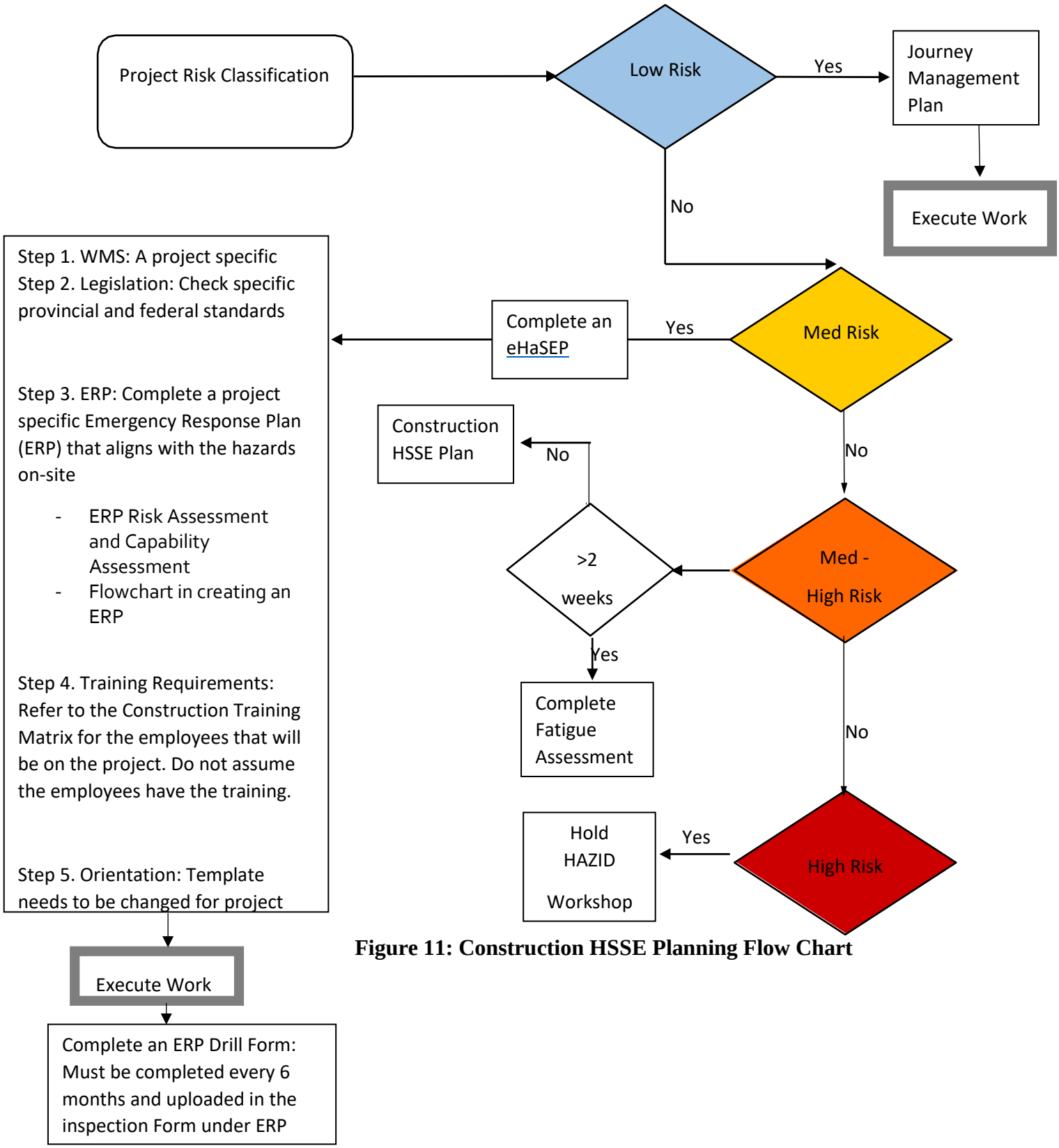

Figure 11: Construction HSSE Planning Flow Chart

Figure 11 above described the HSSE planning flow chart developed if an HASEP or HSSE is to be applied on individual projects and Table 8 described the responsibility matrix to go along with the

flow chart. The figure depicted that medium risk projects required HASEP when a less rigorous safe plan on projects is needed but when the project complexity becomes higher than the level of a medium risk project, a construction HSSE plan would be required. However, low risk projects would not require both the HASEP and HSSE plan. This action guideline helped in the early stages of all projects planning phase, with the assertion that our existing risk and opportunity level (ROA) may tend to focus more on the costs versus the risks on a project.

Communication Type	Target Stakeholder	Purpose	Frequency	Person Responsible	Delivery Method
Project Status Report	Client	Communicate project status and discuss progress	Monthly	Student Researcher	Email report; follow-up conference call and in-person meeting
Schedule Report	Client				
Cost Report (incl. financial invoices)	Client				
Activity Tracker	Contractor Co.	Communicate action items and outstanding items	Daily Weekly	Student Researcher	Excel reports, emails, filed in share point
Document Control	Contractor Co.	Communicate deliverable status and review status	Daily	Student Researcher	Excel document, filed in share point
Project Plans	Contractor Co.	Provide quality standards and best practices for project	Revise as needed	Student Researcher	Formal document
Conference Calls/ Discussions	Contractor Co.	Share program information with all stakeholders and seek input on key issues	As required	Student Researcher	Conference calls, meeting minutes as needed
Project emails	Contractor Co.	Share information and/or seek input	As required	All Participants	Emails
Detailed Project Review	Contractor Co.	Share information and seek input	Quarterly	Participant #1	In person meetings
Daily Construction Reports	Contractor Co.	Provide details on construction progress	As required	Participant #3	Formal document
Daily Cost	Contractor Co.	Daily estimates of direct costs and earned values	Daily	Participant #2	Emails

Communication Type	Target Stakeholder	Purpose	Frequency	Person Responsible	Delivery Method
Weekly Schedule	Contractor Co.	Provide updates of planned activities and update working schedule	Weekly	Participant #3	Emails
Project Information Document (PID)	Client	Provide details on project information	As required	Participant #7	Formal document
Request for Information (RFI)	Contractor Co.	Formally request information of contractor company and client	As required	Student Researcher and Participant #6	Formal document
Notice of Change Form (NCF)	Client and Contractor Co.	Formally issue a change order to scope of work to contractor or subcontractors	As required	Participant #6	Formal document

Table 8: Responsibility Matrix Developed on Project Sites

The development of the responsibility matrix shown in Table 8, helped stakeholders to know, understand and apply their efforts towards the success of the project sites they were involved with. The following training list was also developed and considered crucial as part of the action planning phase for stakeholders on all project sites to acquire the skills needed to utilize an IMS process. In clarity, these skills encompass all the focus areas itemized below in Table 9; Approved Training Requirements for specific project planning activity phases.

Specific Activity-Training	**Training Expectations**
Opportunity Generated	Create an opportunity for the submission in corporate dynamics SharePoint
Document Review	Complete an IMS review of opportunity and seek approval from management to proceed with opportunity
Proposal Number Generated	Ensure ROA is completed and opportunity is progressed to proposal stage
Kick Off Meeting	Conduct a Kick off meeting with all stakeholders relevant to the project, both internal and external
Contract Approval Group Review	All contracts must be reviewed by the contract approval group (CAG)

Bid-Bond Request	Bid-Bond request form must be completed where specific to the given project
Notice of Intent to Bid	Advice must be given to the appropriate stakeholder whether there is the intent to bid
Site Visit	Site visit must be completed by stakeholders who assume primary responsibility for the site
Tender Form Completion	Tender documents must be completed timely
Subcontractor Evaluation	Evaluate the need to select a given subcontractor using the IMS subcontractor database evaluation process
Costing	Complete cost estimate using HeavyBid process and HeavyJob project management software to monitor cost performance
Review Estimate Reports	Ensure appropriate stakeholder reviews is complete
Scheduling	Develop both baseline and working schedules at all times to effectively monitor and control project schedules
Tender Closing	Stakeholders who manage projects must familiarize with all biding process
Filing	Appropriate documentation and proper organizing of files is critical to project success
Project Handover	Project must be properly handed over to the project leader for execution in accordance to stipulated guidelines

Table 9 Approved Training Requirements during Project Planning Phase

4.3.3 Stakeholder Management and Engagement

In determining the kind of stakeholder approach to improve project performance, I considered that many of the stakeholders who are engaged with the studies were drawn from the construction group which I belong. Hence, it was critical to generate actions that would ultimately help the construction team to improve project performance. To do this, I met with all participants to check with them what actions would drive continuous communication, engagement and foster ongoing relationships. They were very pleased with my request to discuss with them. Their responses were tailored towards gaining alignment and establishing a robust ARM to manage our stakeholders' engagement.

Participants talked in terms of the refinement of our ARM process. The original ARM process allowed stakeholders to know their roles and responsibilities in the development and execution process and offers a framework in which our project classification questions can be addressed. It

offers an acceptable way to provide authority matrices during our RFP stage through the risk planning and contract review phase. Participants felt that part of their roles was conflicting with this ARM as they were not sure of how they fit in. I took steps to discuss with the management of the need to revise the ARM and allow participants names and authority level to be matched with the ARM and to adjust some of the authority approval limits for project managers during signing of change orders to save approval time. This was accepted and participants now know what level of financial authority they have using the newly improved ARM. In addition to formulating the new ARM, a follow up meeting was completed to discuss how the stakeholders risk ranking should be matched with the project classification and complexity level.

This risk ranking rating is now being adopted. It ranged from level 1 (low assessment level for new leaders or leaders who can only manage a local project in their own discipline) to level 5; leaders who can manage projects greater than 10 technical disciplines and are fully dedicated to multidisciplinary disciplines in the performance of their work, anticipates a high of level of scope, capable of stewarding to multiple stakeholders and are recognized leaders in scope development.

4.3.4 Risk Management

In this planning phase, I met with participants #1 and #2 who are privy to our risk management process to seek their understanding regarding the risk model to use on the project sites. The risk matrixes shown in Tables 11 and 12 was used to measure the probability and likelihood of risks on these projects. It was used to determine the typical risk classifications and necessary steps to address the major risk issues during the planning and execution phases of the projects. The results revealed that if stakeholders know the risks levels, they are able to develop robust strategies to mitigate them.

"What are the risks that are associated with the project, what are the resources required to deliver the project. You know, so those are things that challenges what you face. Also, what are the support systems that you need to deliver the projects in terms of the subject matter experts, technical authorities, you know, depending upon the disciplines and scope involved in the project delivery"-Participant #1.

These risk matrixes were considered suitable to monitor the performance of the projects at start, at 50% review and at completion. It was agreed to by all the stakeholders. I adopted them at the project sites and monitored the risk level change improvements. With that steps, the risk mitigation measures were formulated as shown in Table 10 that showed the risk issues identified and the mitigation methods proposed by participants #1, #2, #4 and #5 in the action research process.

Potential Major Issues	Proposed Mitigation Methods
Cost estimates through the request for proposal (RFP) and Design-Build process are higher than expected.	• Negotiate with contractors to identify options to reduce costs • Discuss with stakeholders the impacts of increased costs
Contractors are not operating in a safe and environmentally conscious manner.	• Instill a culture of HSSE compliance at project inception to contractors • Undertake regular reviews, checks and audits • Issue mediation orders and/or stop work orders, if required
Poor performance of project teams not meeting project milestones on designs and/or not providing deliverables of the required quality.	• Regular monthly review of performance • Utilize the earned value management (EVM) trigger methodology for early identification of potential issues • Constant management of team input in compliance with contractual requirements for performance
Schedule delays through areas such as project team performance, site conditions, permitting, approvals.	• Regular review of schedules during execution • Identify options for fast-tracking schedules, where required
Stakeholder concerns not being addressed in the design and construction process.	• Follow the requirements of the stakeholder management process developed and promote timely engagement and consultation

Table 10: Risk Mitigation Measures for Construction Projects

Table 10 presented the proposed mitigation methods the stakeholders adopted when dealing with the risk issues at the respective project sites. In the case of project sites #3 and #4 the risks were deemed more challenging, so the risk matrix approach was supplemented with a construction HSSE planning flow chart developed in Figure 11 and this reduced risk related non-compliances, and was acceptable by all participants as a tenable risk model and strategy.

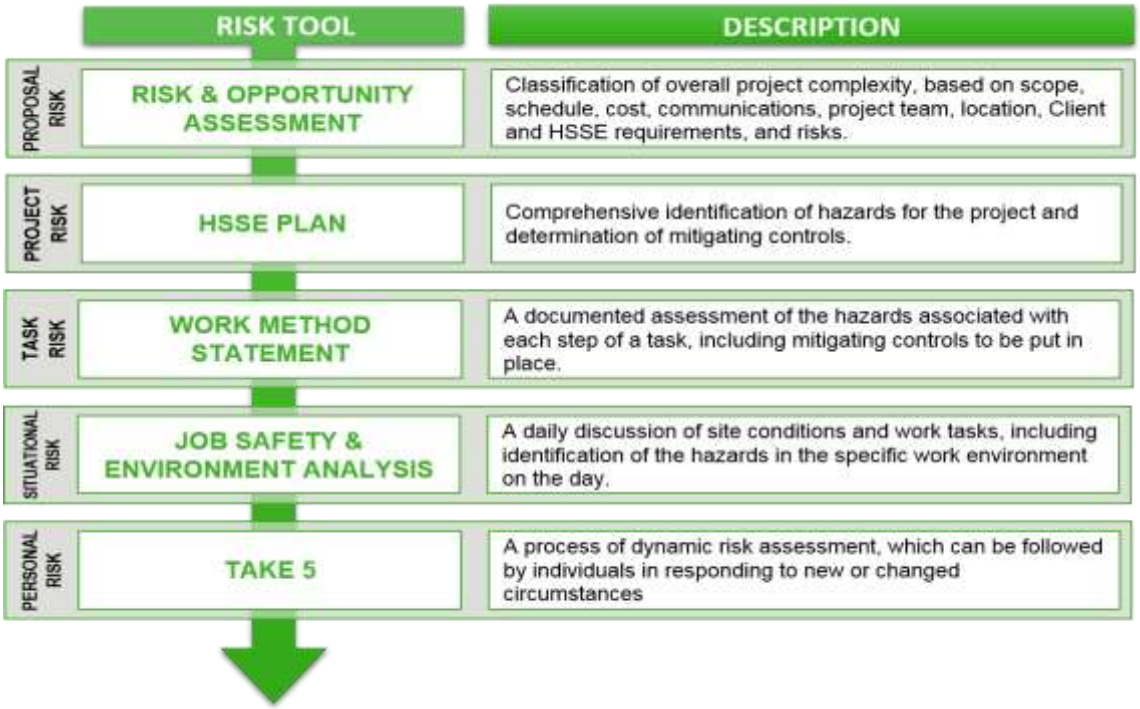

Figure 12: HSSE Project Risk Tools

Figure 12 also presented the modified risk tools that the stakeholders applied when faced with other risk categories at the project sites. It included the risk categories that are directly connected with the flow chart developed by the participants under Figure 11 and governed by the risk classifications and consequence criteria used at the respective project sites, shown in Tables 11 and 12.

Risk Classification	Typical ROA Level	Typical Tasks
Low Risk	Level 1	• Business Travel • Site visits to meet with Personnel
Medium Risk	Level 2 to 3	• Site visits to conduct work • Site occupancy less than 5 employees (including subs) where we are not a Prime Contractor
Medium-High Risk	Level 3 to 4	• Site occupancy more than 5 employees (including sub) where we are a Prime Contractor
High Risk	Level 4 to 5	• Multiple Trades / Subcontractors • Multiple Offices and Disciplines • Project Duration > 3 Months

Table 11: Risk Classification Levels

Health & Safety Consequence or Impact Description:

Catastrophic	5	Death, toxic release off-site with detrimental effect, very high financial loss
Major	4	Extensive injuries, loss of production capability, off-site release with no detrimental effects, major financial loss
Moderate	3	Medical treatment required, on-site release contained with outside assistance, high financial loss
Minor	2	First aid treatment, on-site release immediately contained, limited financial loss
Insignificant	1	No injuries, low financial loss

Environmental Consequence or Impact Description:

Catastrophic	5	Release to air, water or land with life threatening impacts on or off site. e.g.: human death(s); destruction of endangered species; habitat destruction; human water supply or food destruction; localized extinction of a species; Protracted or extensive clean up requiring external resources.
Major	4	Release to air, water or land with destructive impacts on or off site, e.g.: destruction of animal /fish life, habitat damage; making air, water or land unfit for use by living things; destruction of known or unknown indigenous people's /heritage sites ; irreversible alteration of the natural environment or its aesthetics; dust or noise affecting a region; large volumes of contaminated or hazardous waste. Requires clean up using external resources.
Significant	3	Release to air, water or land with impacts requiring long term recovery. e.g.: habitat disturbance; damage to indigenous people's/heritage sites; alteration of the natural environment or its aesthetics; generation of contaminated or hazardous waste; or large volumes of solid waste; dust or noise affecting the immediate area. Clean-up can be managed by internal resources.
Minor	2	Release to air, water or land with resulting in localised damage to worksite requiring short term recovery. e.g.: readily repairable impacts (physical or aesthetic) to the natural environment, indigenous people's/heritage items, property, or business operations; public nuisance (noise, dust, odours); generation of small quantities of waste. Clean up can be completed by internal resources.
Insignificant	1	Release to or disturbance of air, water or land resulting in no impact or localised (i.e. isolated to worksite) impacts within authorized limits. Short term impact with complete recovery. Clean up can be completed by person(s) involved.

Likelihood Description:

Almost certain	5	Incident will occur in every circumstance (e.g. every time).
Likely	4	Incident will probably occur (e.g. 1 in 10 times).
Possible	3	Incident may occur at sometime (e.g. 1 in 100 times).
Unlikely	2	Incident not expected to occur, but conceivable (e.g. 1 in 1, 000 times).
Rare	1	Incident would only occur in exceptional circumstances (e.g. 1 in 10,000 times).

Risk Analysis Matrix:

Likelihood:		**Consequence:** Catastrophic	Major	Moderate	Minor	Insignificant
		5	4	3	2	1
Almost certain	5	25 (VH)	20	15	10	5
Likely	4	20	16 (H)	12	8	4
Possible	3	15	12	9 (M)	6	3
Unlikely	2	10	8	6	4 (L)	2
Rare	1	5	4	3	2	1 (VL)

0-3 (VL) Very Low Risk	No additional controls necessary. Continue to monitor risk.
4-6 (L) Low Risk	Consider additional controls to further reduce risk.
8-12 (M) Moderate Risk	Controls must be implemented to reduce risk.
15-16 (H) High Risk	Risk Unacceptable, do not proceed without controls, minimum of 'engineering controls'
20-25 (VH) Very High Risk	Risk Unacceptable, do not proceed without controls, elimination or substitution controls required

Table 12: Health and Safety Consequence Level

Tables 11 and 12 showed the typical risk classifications, typical tasks, associated risk levels and the environmental consequences stakeholders considered to develop the appropriate risk mitigating strategies at the project sites.

This improved the overall health and safety performances at the project sites and ensured stakeholder accountability during field execution. It demonstrated that when stakeholders know their project risk levels and tasks, they are more likely to develop robust risk measures that would remove unnecessary

field execution fears and present a clear message to the end users that the projects would be delivered safely.

This further emphasised the need for stakeholders to ensure all projects risks are rated properly using the organization IMS risk matrix processes shown in Tables 11 and 12. This is to allow projects to be delivered safely with minimal risks, while still satisfying the organization sustainability related targets; meeting operational needs, achieving profit and economic targets and satisfying environmental related targets (Loosemore, 2010) and (Bourne and Walker, 2006).

4.3.5 What drives Profitability

In determining the profitability influence on project efficiencies, I needed to relay to the findings and insights provided by participant #1 and # 6, that our external stakeholders expect to get value for their money and the expectation is that this should be clearly spelt out. There should be a clear understanding of what the expectations are on projects, profit margins expectations must be clear and unambiguous and stakeholders must develop a thorough economics or have that understanding of the requirements of the economics to build a profitable project.

The following actions were proposed by stakeholders: Set up the FMT tracking process for the projects to capture profit margins early, monitor project cost complexity matrixes to evaluate variances, discuss with cost analysts on external costs and internal costs changes on a weekly basis to address areas of losses, track profitability reports using cost software; HeavyBid to evaluate estimates and HeavyJob analysis reports to track cost variances on a weekly basis and monitor EBITDA early.

I took these proposed actions and met with the operational managers of the division to get their buy-ins. They supported the idea that they were good and offered additional insights that our HeavyJob project management could provide in the process of monitoring our external efforts and internal costs to reflect our profitability expectations. The FMT tracking tool developed in Table 7 was also considered appropriate by them, as those could be properly integrated into all projects. Prior to now,

the focus has been to adopt it for only high-end capital lump sum projects with dollar value greater than $250K but the discussion led to the formulation of a cost tracking FMT that was suitable for time and material (T&M) projects also valued at more than $100K in addition to the existing lump sum projects. In the case of project site #1, 2, and #4 they were T&M and only project site #3 was lump sump. So, these tracking mechanisms helped to track performance early and address areas of variations.

This approach of tracking with HeavyJob as suggested was deemed suitable during project execution and HeavyBid was deemed suitable during the planning and RFP phases. The approach was applied to all project sites and the results were discussed with stakeholders for all respective sites. This helped me to develop a full understanding of the profit status of the projects as the lead manager/researcher. In all, the findings revealed that to remain sustainable, profitability must be driven by targets and stakeholder alignment to monitor the performance of these projects using well establish economics, understanding the operating income or EBITDA requirements and being familiar with the project economics from the very start are crucial driving factors for profitability.

The findings presented here demonstrated that sustainability and effective portfolio management play a huge role in influencing and enhancing project performances. This occurs when stakeholders could develop robust cost matrices that not only set clear expectations of their economic targets but avoid unnecessary and unattainable profit margins and economic targets while limiting risks and safety issues on the projects.

The formulation of a cost tracking FMT that was suitable for time and material (T&M) projects revealed the importance and relevance of sustainability to our project management process. This is so because the business unit would now be able to adopt the FMT for the financial implementation and oversight of both lump sum projects and time and material projects valued over $100K.

This study also revealed that establishing a clear and transparent project economics early on during the project development phase, benchmarking those economics and clearly defining the limits of such

economic benchmarks create a feasible project and a clear understanding among all stakeholders what the project viability looks like (Crawford, 2013). This would help to clearly define what the expectations are and how to limit cost overruns or large variances that may later reduce the overall project performance on the projects (Vos and Achterkamp, 2006).

4.3.6 Project Cost Efficiencies and Loss Reduction

Our stewardship model provides a requirement model through which project leaders can manage subcontractors, consultants and engage those who are capable of successfully executing our projects. These requirements as agreeable by all participants were critical to support our project objectives and strategies. The model as in the case of subcontractor management for example should be one that identifies the necessary experience, qualifications and safety performance to complete the requested scopes of work safely, and minimize risks on our projects. Two score card models was considered suitable to reduce our project losses for this purpose: One that identifies and select the subcontractor/contractor for the project and one that identifies and select the key stakeholder for the project. These two was reviewed and monitored to track efficiencies. In both cases, the discussions with the stakeholders focused on: Undertaking and gathering information that draws on experiences, knowledge, history and data on how previous projects had been completed. This includes the development of the project details, the summary of services and the status and references on past scopes of work. Evaluation and shortlisting of both the stakeholders and of the subcontractors to execute the work to cut down gaps and non-compliances. The evaluation criteria the participants considered suitable based on these requirements are shown in Table 13 below.

Proposal Evaluation Criteria	Evaluation Weighting
Project Delivery	**XX / 100**
• Detailed Work and Phasing Plans	
• Project Understanding and Methodology	
Project Team and Qualifications	**XX / 100**
• Personnel	

Proposal Evaluation Criteria	Evaluation Weighting
• Qualifications	
• Past Project Experience	
Cost and Risk	**XX / 100**
• Price	
• Financial Stability	
• Exclusions	
• Agreement to Terms and Conditions	
• Bonding Capacity	
Health and Safety	**XX /100**
• HSSE Stats	

Table 13: Evaluation Criteria for Projects under a Subcontractor Management Process

4.4 Taking and Evaluating Actions

The goal of this phase was to make sure that the actions and/or evaluated actions taken were meeting the intended objectives and that the participants recognized how those may have contributed to their individual projects. It was also to make sure that the changes generated was influencing the performance of the projects as anticipated (Coghlan and Brannick, 2014). It was equally important for me to meet with them individually to remove any form of biases that may arise from a group bias (Greenwood and Levin, 2017). The data analysed from this phase is shown in Table 14.

There were instances where some of the actions taken did not satisfy the intended outcomes or was partly meeting the intended goals, in such cases, a re-evaluated action was adopted back to the project. For example, on research site 3; Nusatsum River Bridge, there were indications that some of the actions proposed with communicating to financial management tracking (FMT) team about the revenue generation of 15% threshold had not been working well. A new meeting was held in January 2020 with stakeholders #2 and #8 overseeing that specific project to modify the approach. Discussions around risk matrix process was formulated to guide the manner in which project risks can be properly assessed using the health consequence and probability matrixes, shown in Table 12.

Table 14 below showed the final defined themes, actions taken and evaluated, and the changes implemented. The learnings generated were implemented back by the stakeholders on the projects and were instrumental to support the overall success of the projects. The concept behind reflections, action taking and evaluating is a fundamental requirement for any successful action research process (Coghlan and Brannick, 2014). Hatch (1993) argued that an action researcher should draw on knowledge of change, and then learning will take place. It presupposes that an action researcher, must reflect on a course of action and then take those actions to generate knowledge that is actionable.

S/No	Themes	Codes	Actions Taken/Evaluated	Changes Implemented
1	Factors that drive KPI effectiveness and influence project delivery	• Understanding the project schedule • The cost to execute the project • Regular stakeholder stewardship • Have right people with right skills and experience • Discuss the project objectives, scope and processes • Meet regularly with the stakeholders	• Tracked cost reports weekly and bi-weekly and develop a comprehensive financial management tracking report to monitor KPIs with specific stakeholders • Scheduled follow up review meetings and ensured IMS forms are signed off and archived into Global SharePoint folders as a record of approvals	• FMT mandatory for all project managers who lead projects greater than $250K project value
2	Management processes and strategies to address gaps and non-compliances	• Lack of training and competencies to use the IMS processes • Lack of alignment with senior management • Develop an efficient governance and assurance system • Seek senior management support on process changes • Build effective communications	• Held an audit review of approach to address non-compliances on November 12, 2019 • Scheduled an alignment meeting with stakeholder on non-compliances and identify training deficiencies early • Scheduled financial management tracking meeting (FMT) on February 24, 2020 to discuss ways to	• Compulsory FMT tracking implemented for both cost-plus projects and lump sump projects • Mandatory IMS forms must be signed off at both start and closeout of projects and properly documented • Annual stakeholders

		among stakeholders	monitor project variances • Developed a Construction Project HSSE Planning Process Flow Chart • Discussed with operational managers about monitoring and controlling project gaps and stakeholders' non-compliances in the December 5, 2019 management stewardship meeting	ranking instituted • Construction Project HSSE Planning Process Flow Chart must be applied on all projects • Risk levels for all projects created to govern project assignments
3	Stakeholder management and engagement	• Depends on the type of project and the scale of the project in terms of the CAPEX • Project complexity and scope	• Completed and reviewed the Authority Responsibility Matrix with the appropriate stakeholders to gain alignment • Communicated with stakeholders in project weekly meetings regarding CAPEX values • Assess project complexity to ensure projects are matched with skill sets of mid-level stakeholders	• ARM approvals required to determine CAPEX value of projects • Senior executives must review ARM prior to proceeding to project execution phases
4	Risk management	• No clear understanding of the risks associated with the project and the support system needed to deliver the project and unanticipated risks	• Completed and monitored the risk matrix process • Completed a risk matrix review for projects at start, at 50% and at 100% project phase **Re-evaluated actions on project site 4:** • Developed the construction project HSSE planning process to determine	• All completed risk matrix had to be properly filed and documented in SharePoint database • Determine typical risk opportunity assessment level before proceeding on projects

			project risk complexities	• Risk matrixes had to be approved by operations managers
5	What drives project profitability	• Review the project cost early and not spending beyond budget at any time than expected • Understand the complexities of the project, what are the risks, what are the TECOP • Run the economics and understand the profit expectations	• Set up the FMT tracking process for the projects to capture profit margins early • Monitored project cost complexity matrixes to evaluate variances • Discussed with cost analysts on external costs and internal costs changes on a weekly basis to address areas of losses • Tracked profitability reports using cost software; HeavyBid to evaluate estimates and HeavyJob analysis reports to track cost variances on a weekly basis and monitor EBITDA early	• FMT meeting mandatory for all project stakeholders • Stakeholders expected to complete a full review with the project director at every project phase until completion • Projects profitability targets must be reviewed by senior management
6	Improving project cost efficiencies and reducing losses	• Build effective communication and robust information sharing • Align the team and develop the proper cost estimate for the project	• Reviewed score-card reports of stakeholders assigned to designated project • Met with contract team to provide feedback received from IMS external audits completed • Monitored project cost complexity matrixes to evaluate variances **Re-evaluated actions on project site 3:** • Discussed with project cost analysts on external costs and internal costs	• Score-card reports of stakeholders must be considered to determine a mid-level stakeholder's assignment • Lessons learned reports must be shared and properly filed • Stakeholders especially project managers expected to steward to the operational

			changes on a weekly basis to reduce potential losses • Tracked cost reports using cost software; HeavyBid to evaluate estimates and HeavyJob analysis reports to track cost variances on a weekly/bi-weekly basis • Prepared memos to external stakeholders to support field change notices	managers on project progress • Project directors should seek client feedback annually on completed projects with EBITDA value greater than $250K

Table 14: Phase 3 Final Themes, Codes, Actions Taken and Changes Implemented

The actions generated was appreciated across the business units by senior managers, mid-level managers and key stakeholders following the development of a risk matrix model, our new HSSE flow chart, a cost tracking matrix and the responsibility matrix developed in phase 2. The stakeholders in our quarterly meeting held in Q1 2020 agreed that the way we do things has now significantly improved, with additional increase in profit margin for project sites #1, #2 and #4, i.e. 19% for site #1, 18% for site #2 and 18% for site #4, averaging a 3% increase from the corporate target of 15% to 18%. Also, the construction operations leader and the group manager at a meeting held with me on February 20, 2020 attested that the initiatives have indeed improved the way we work.

The documentation process and creation of the various models during project execution was considered beneficial by many other participants for its improvements. The refinement of the old processes such as those in our ARM showed, we could effectively monitor project performance and reduce stakeholder non-compliances. Team members now see the revised IMS documentation processes as one key strategy to a wealth of project management knowledge. This has also contributed to our ISO 9001 recertifications with zero non-compliance issued.

A principal of the construction division also mentioned in our stewardship meeting that he was particularly pleased with the level of actions generated and the subsequent engagement with key

stakeholders that followed. On that note, the principal approved me to champion a multi-million-dollar project opportunity for the construction business unit as a lead manager. In addition to this, there has been ongoing engagement with other functional teams on several large design build projects that span across the North America region. This was largely attributed to the changes made and the implementation of the feedback follow-up process through this research study. These responses from staff, managers and senior managers as shown in sections 4.3.1 through to 4.3.6 showed the level of acceptance of the proposed actions.

I believe the stakeholders have now been significantly empowered and all form of non-compliances eliminated throughout this AR process. In addition, significant actionable knowledge was present and new learnings generated. Moreso, the operational leaders and business unit managers of the construction organization have now assumed a more strategic role in monitoring mid-level stakeholders whose trainings are not up to date and have engaged those stakeholders to take advantage of the improved processes.

The development of a new financial tracking tool and the use of the stewardship reporting model are ways the organization has agreed to track project performance and the executors of the program for our large projects. Our new financial management tracking (FMT) process - recommended as part of the actions - was accepted by the project leaders as a more effective way to track revenue recognition of projects.

Prior to now, many stakeholders did not totally understand how the profitability measures work, using gross revenues, net revenue and EBITDA tracking; with these new changes, they agreed there have been improvements. On the commercial end, contractual practitioners who are at the front-end phase, in a more subtle form, now understand that our mid-level stakeholders play a vital role in delivering the project objectives and meeting our contractual obligations on our projects. In all, the research has tremendously contributed in profound ways that the learnings are being shared in ongoing stewardship meetings (Siew et al., 2013).

4.5 Specifying New Learnings

Entities	Learnings
For the Stakeholders	• Projects cannot be independently led without some form of collaboration from managers who lead the work. • Management support on projects will be governed by the CAPEX value on the project being executed. • Running project economics and understanding the key performance indicators (KPIs) expectations early are critical to increase profitability.
For the Contractors	• A construction Project HSSE Planning Process would help contractors and subcontractors to effectively plan and manage a project risk. • The development of a risk matrix and project rating metric would help to monitor the performance of projects • Early discussions and adequate follow up by a manager on subcontractor cost and schedule issues can help the subcontractor to promptly manage the issues and enhance project successes.
For the Construction Division	• Project performance can be improved if there is effective communication and a strong feedback process among stakeholders. • A well-documented process during the life cycle of a project is vital to effectively deliver projects. • Risk mitigations can only be well implemented if there is a robust

	integrated system that drives it and if robust mitigating strategies are in place.
For the Organization and the Clients	• Managers and project leaders who have the right skills and are well-trained with the integrated management system are better able to deliver projects effectively. • Strong leadership from an early phase on projects will improve project performance • An integrated management system will work at its best if there is a governance system in place to control it. • Organization can increase profitability using strong financial management tracking (FMT) and a clear understanding of the technical, economic, commercial, organizational and political" (TECOP) factors that can influence the project.

Table 15: Summary of Key Learnings

For the Stakeholders

As reflected in Table 15, one of the key learnings that the stakeholders acknowledged for the study was that projects cannot be independently led without some form of collaboration from managers who lead the work. This argument was particularly true throughout the active discussions and participation of the stakeholders. The actions and subsequent steps taken to implement them showed that the results were more robust and effective when stakeholders who are engaged with the project share thoughts and insights free of biases and put the interest of the project as priority in the discharge of their work.

There was also the understanding and learning that stakeholder engagement would be governed by the CAPEX value on the projects being executed. The CAPEX value is the capital expenditure value for the projects that determines the complexity of the projects. This clarifies to a large extent why there were variations in the degree of stakeholder engagement at the different project sites for this study. Another learning for the stakeholders is the understanding that project economics is critical to support the proper execution of a project strategy and is significant to increase profitability (Craddock, 2015).

For the Contractors

One of the key learnings for the contractors and subcontractors is the argument that a construction Project HSSE Planning Process would help contractors and subcontractors to effectively plan and manage a project risk. It will help provide a risk justification for the different range of projects. This is particularly helpful to the contractors to help them understand why their projects was selected to complete certain project deliverables, help them to understand the legislations, and response plans attributed to a specific project. This would ultimately help them to monitor their own resources in the execution of their own work, manage their labour requirements and support the establishment of appropriate risk matrix requirements to monitor the performance of their projects.

The subcontractor management process also offered another learning for owner companies, contractors and subcontractor companies to promptly manage issues, allow proper incorporation of a feedback process and facilitate an ongoing evaluation of the subcontractors in a way that is fair and transparent. This would offer significant benefit to both the subcontractor company and my organization to confirm if there is adherence to project requirements.

For the Construction Division

One of the key learnings for the construction division reflected in the analysis phase and the findings phase, is that effective communication and the reduction of process gaps and non-compliances cannot be underestimated (Rondinelli and London (2002). The construction division learnt through several

stewardship meetings and feedback loop process that a well-documented process during the life cycle of a project is vital to effectively deliver projects.

This is quite evidently true given that the recertification received from the external auditors in March 2020, was largely tied to the ability to manage our documentation process through adequate filling in folders, subfolders and in SharePoint sites. The same applies to our risk mitigations process that was facilitated for easy review and approval by the responsible stakeholders. This enhanced the review and approval process for our management. This also helped the construction division project team to address issues timely and assist with any required field modifications and allowed the division to meet our strategic business objectives with zero non-compliances.

For the Organization and the Clients

Among the many learnings generated for the organization is that managers and project leaders who have the right skills and are well-trained with the integrated management system are better able to deliver projects effectively. The skill deficiencies were one that has contributed to the ongoing non-compliances in the IMS processes (Worsley, 2016), Chau (1997), Heravi et al. (2015) and Nini et al. (2018). Other learnings include the development and implementation of a governance system and a strong leadership framework to monitor and control IMS processes.

That leadership would entail the creation of a robust financial management tracking (FMT) and a clear understanding of the "technical, economic, commercial, organizational and political" (TECOP) factors by the leaders of my organization as a metric to drive project performance and increase profitability on the project.

4.6 Summary

This chapter presented overarching findings of the study, including the action taken, the evaluation of the actions and the changes made in the organization. It discussed the different specific learnings and the implementation of the actions and the kind of responses and feedback it generated from within the organization and outside of the organization with the clients. There were numerous findings that

supported the continuous tracking of project performances using the traditional KPIs, that contributed significantly to improving project performance. However, the learnings from the study revealed the need to implement new drivers to support KPI usage on project performance such as understanding the project schedule and cost requirements on time, knowing and establishing a safety/risk model during execution, and having proper stakeholder regular stewardship. There were discussions around managing risks with robust mitigating measures to capture risks early enough to mitigate them promptly. There were also discussions around implementing a governance system to ensure continuous improvements of the IMS processes and the need for stakeholders to have effective communication strategies over the life cycle of the project (Flyvbjerg, 2002). There were discussions around skill sets and poor competencies and their impact on project performances and how they can be managed to eliminate gaps and stakeholder non-compliances. This chapter also discussed the need for stakeholders to find opportunity for improvements through constant project reviews, early project information sharing, and through using the improved authority and responsibility matrix (ARM) model (Payne and Calton, 2002).

4.7 Reflections and Learnings

Over the course of my findings phase for this study, one thing stood out to me as important and that is project success can only be achieved if every stakeholder is held accountable and has a set goals and timeline to achieve those goals. These were facilitated through several collaborations, stewardship meetings, feedback sessions and follow ups with several stakeholders who took part in the study. The whole process taught me the value of time and made me appreciate working with others, leading some of them and at the same time appreciating their inputs and responses when it comes to project execution. The participants felt honoured to have taken part in my study.

As I work towards my research goals, I have learnt how to be proactive in my work and encouraged others to do the same. I and my participants set an atmosphere that was cordial, respectful and engaging. These allowed my stakeholders to offer me unbiased views ad insights that not only provided me strong actions and plans that were later implemented in the study and generated

actionable knowledge. It offered strategic steps to take regarding non-compliances in our IMS processes and how they could be reduced to improve project performance and increase value to the construction division and our organization (Antonacopoulou, 2006).

I also learnt that, profits while being crucial for a projectized organization should not be the key focus at the start of a project. There were arguments to support establishing a mechanism to enhance profitability through a "coordinated approach" that are unambiguous and clear with the client stakeholders. In addition to this, as a lead manager, I recognized that I am expected to follow up with relevant stakeholders at every stage of the project life cycles to monitor project status, implement sustainable practices, establish effective communication and foster a strong relationship and network with my stakeholders. In all stages of my AR processes that I did this, I did it with the support and alignment of my participants. It did not only remove unexpected project barriers but helped to identify and eliminate unknown project risks, enhance our project performance and increased learning opportunities for each and every participant (Eble, 1988).

CHAPTER FIVE
DISCUSSION OF FINDINGS

5.1 Introduction

There were several issues identified from the analysis of my qualitative data that include project delivery effectiveness, management systems processes, challenges of an IMS processes, managing non-compliances, stakeholder management and engagement strategies, stakeholders' influence on projects, risk management processes, profitability and project efficiencies and how to control project losses. To address many of these issues, I took a number of actions and implemented them in consultation with my research participants. The findings were presented in chapter four and discussed below to provide more depth of analysis.

5.2 Discussion of Results

5.2.1 Discussions on Factors Influencing Project Delivery

There is a clear indication from the participants that projects cannot be independently led without some form of collaboration from teams or from those who lead the work. That understanding also supported the assertion that project leaders who have the right skills and training are better able to assess the priority of the key performance indicators in the right manner. Meeting frequently to discuss the proper scope and aligning that with constant follow-up reviews with strong leadership was considered paramount in order to ensure effective project delivery. Most participants argued the importance of following up through focal meetings to deliver the most value and that stakeholders' influence plays a critical role (Betran and Melon, 2017). That argument rang true when participants #2 and #3 alluded to having proper sign-offs to establish that the IMS processes involved has been followed. It demonstrated that the execution phase of projects and its delivery mechanisms cannot be said to have been fully engaged if there is still absence of collaboration among key stakeholders.

5.2.2 Discussions on Project Delivery Effectiveness

The findings in this section alluded to the need to establish a clear understanding of project requirements before taking on the development phase. Participants #2, #3 and #7 addressed the need to have a clear expectation and a clear understanding of KPIs before progressing on a project and establishing that clear expectations on how the KPIs would be measured was critical. That gap has existed in the organization and the same is true if the project is to be ranked amongst others at the end, and if the delivery and meeting of the KPIs would be governed by the initial agreement that has been established by the client at the start of the project. Participant # 3 emphasized the need to have that framework established very clearly at the beginning if it is to produce the expected outcomes. The arguments presented by the participants collaborated the assertions by Hinze and Selstead (1991) that project understanding is critical towards an effective monitoring of KPIs. Participant #7 also established that KPIs are still the most robust approach to effectively monitor project performance.

5.2.3 Discussions on Integrated Management System Processes

The arguments presented here perforated the arguments around having a management system in place and discussed the importance of strong project management leadership if the IMS processes would work. One of the theories prior to the study was an over-reliance on the IMS system and its processes to autonomously perform. The findings revealed that, even if the organization builds a very robust management system, there will be less success if the management processes isn't managed properly by strong leadership (Raelin and Coghlan, 2006). It further asserts, as per the insights from participant #5, that the integration of leadership support is critical. Participant #7 had argued that, even though this is a good tool to have, there should be a dynamic change with the use of the system if it must deliver the kind of results senior management expects. To do that, he argued taking into consideration changing variables (other factors that might impede on the successful use of the IMS processes) because of the nature of the construction business.

"Yes, it's helpful, but it's also confusing. It's helpful, but it's confusing because the way projects are basically, executed are different. So, is a good start. It's a good tool to have, but because of the speed and the changing nature of projects and the day-to-day activity, you don't have to always have the time to follow the process. I

mean, if there was more time, it's okay. But there's always pressure. There's always changing variables and I think changing variables is just the nature of construction no matter where you are unless you're in Scandinavia"-Participant #7.

Arguably, the processes could offer significant relevance if there is a top-down approach to controlling its applications and implementations within the organization, but they can be equally confusing if they are not well managed (Genaro and Loureiro, 2015).

5.2.4 Discussions on the Challenges of an IMS processes

The study revealed that the use of an integrated management system processes offers a modernized approach to improving project performance but addressed the need to have proper training if the system is to meet its strategic objectives. There are implications if the users of the system are not well trained enough to use the processes that they are expected to administer. The expectation is borne on management to drive these processes and ensure that there is adequate training for users in what one of the participants has called a "*coordinated approach"* to justify the change in the way it should be run (participant #5). When there is that clear understanding through training, there is a higher tendency to remove the biases that often penetrate the application of the processes. To protect the company's interests, versus stakeholders leaning towards protecting their own interests, may therefore require establishing orientation training from inception where stakeholders have a clear understanding of what the management's expectations are.

5.2.5 Discussions on Strategies to Address Non-Compliances by Mid-level Stakeholders

Mid-level management staff, such as project managers, construction managers and project coordinators are what I will consider as key stakeholders for the purpose of project planning and execution. Growing non-compliances are often driven by the behaviour of the stakeholders towards the organizational processes. Participant #1 argued the need for a management system and its criticality to project performance but talked on having aligned priorities by all stakeholders ready to support it.

"If you don't have everybody from the beginning lined up behind the project that is selected, ready to support it, then you have misaligned priorities"-Participant #1.

Participant #2 argued that the reason why you need an integrated management system is because every functional group within an organization is expected to come to an agreement and contribute to the relevance and core goals of the project. In his arguments, he posited that if you don't do that, you may risk not having enough resources to support your execution process and manage the complexities of the project. The arguments here was that the complexity of projects would determine what level of management strategies and stakeholder engagement to employ. And stakeholder engagement itself is driven by the CAPEX value on a project. These participants were particular about the need for an organizational management model as a tool for stakeholders to address non-compliances (Raelin and Coghlan, 2006)

5.2.6 Discussions on Stakeholder Engagement

Integration across team members was considered paramount among stakeholders if the project must meet its objectives. The study revealed that when different stakeholders have divergent visions of the project, there is a large tendency to cause divergent priorities. Team integration is important to deliver the projects successfully. It was further argued by Goodenough et al. (2017) that an early engagement with the project team can boost project performance. The same argument supported that the focus is not just, as a stakeholder, to be driven by what you need, but by what the project needs from you. In essence, there is an urgent need for stakeholders to understand what the project team needs from them at every stage of the project. That would cause the team to be reflexive rather than reflective and generate new learnings in the process (Rorty, 1982).

5.2.7 Discussions on Stakeholder Strategies

The arguments presented were that, when a project is to be developed and a project manager has been selected based on authorizations, then the organization should take a step forward to make sure there is a governance or assurance system in place to ensure the right tools have been used, the risks have been identified, right management decisions are in place and metrics have been confirmed by an

oversight committee (Meding et al., 2013). These committees may comprise of mid-level managers that will review these assurances to make sure there is proper alignment before senior management undertake reviews.

5.2.8 Discussions on Stakeholder Influence on Projects

The arguments here are that senior management cannot stay aloof but should be willing to support the system during the execution of projects and in properly implementing and monitoring the processes so that users can comply with their usage accordingly. This management style would help the stakeholders to appreciate the value of strong leadership within their organization and help to curtail non-compliances and differing opinions on how the system should operate (Beringer et al., 2012). This influence is considered paramount if the confidence level is to be built. It will also remove one of the major constraints of not meeting targets, including profitability of the projects. The support by senior management would be pivotal to helping the mid-level stakeholders meet their obligations to the project and be accountable for any non-conformance reports (NCR) issued on the project (Horn, 2000).

5.2.9 Discussions on Risk Management

Risk mitigations can only be well implemented if there is a robust support system that drives it (Loosemore, 2010). It must be well defined and must be executed in a way that remove fears. Stakeholders must understand what the issues are to deliver value to the project. In doing so, it will send a clear message to the key stakeholders that, utilizing established risk matrix processes shown in Figure 12 and Table 11 is critical, and should not be less prioritized. Understanding these requirements mean that the stakeholders have a robust risk identification and mitigation process as proposed by participants #2 and #4 in the risk mitigation measures in Tables 10. When stakeholders have a clear understanding of this critical risk management strategy there is a clear indication that the risk component of the IMS system will be viewed as a guiding tool rather than a forced obligation. To address most of these risks concerns, the arguments presented on gaining early engagement would support the ability to mitigate these risks (Bourne and Walker, 2006).

5.2.10 Discussions on Profitability in Project Executions

In this section, understanding the project metrics was considered crucial. Ultimately, the projects being overseen by stakeholders are meant to increase the profitability of the organization and make the organization viable. The argument is that there must be a clear understanding of what those profit targets are and to pay attention to them, with clear expectations. When these are known early enough, the stakeholders can then drive the project's performance more effectively without having to deal with the overruns that come from not doing so early on. The ideas offered by Vos and Achterkamp (2006) indicate that unnecessary and unattainable profit targets are set because of weak strategy around profits and, as such, this corroborates the findings on setting clear targets. The study suggested that running project economics will be a major influencer on the profitability of projects. This entails not progressing with projects whose economics are low and are projected to be most unlikely to satisfy the minimum 15% target requirement.

5.2.11 Discussions on Factors Driving Project Efficiencies

A project manager's understanding, delegation skills and prioritization capabilities were presented as the most crucial factors for improving project efficiencies (Menoka, 2014). The concept of human factor was seen in this regard as paramount if the stakeholders must deliver the most efficient project. The human factor relates to the ability of the primary stakeholder, the project manager, to clearly know what the project targets are and spend a significant amount of time working with functional leadership to address the key functions of the project. To do that, there must be adequate knowledge of what the delegation of authorities and roles are and when they must come into play i.e. the ARM matrix shown in Table 8. The ARM process allows stakeholders to know their roles and responsibilities in the development and execution process and offers a framework in which project classification and limits of authorization questions can be addressed. The same argument was corroborated by Aaltonen et al. (2010) regarding having the right resources to make a system work as long its system processes are not impeded but improved (Hollingsworth, 2005).

5.3 Stakeholder Engagement required on Construction Projects

This research revealed that an improved integrated management system will build a consistent project management discipline across a construction organization. That consistency can only be achieved when the organization project management office (PMO) has a more structured process that allows stakeholders to collaborate and engage more closely, while allowing others who are less experienced to access training to understand how the IMS processes works.

The study showed there were visible gaps in the number of participants who understood the system and its processes and a remodel of a new restructure would be warranted by developing a new, independent governing system that is necessary to create a full understanding of its applications. The study revealed that senior management support is needed to provide refinement to the existing processes. One way to do this, is when management leaders across disciplines adopt and implement stringent audit process and establish strong monitoring ARM approval process during project reviews. When senior management embraces this approach, then the construction projects create a better framework that ultimately drives excellence in project management (Horn, 2000).

Understanding the requirements to support successful project execution will help sustain and maintain organizational success and continuously improve project performance. Certain benchmarks and metrics are also required to be applied by management to govern how construction projects should be managed; among them are complexity matrix reports, HSSE construction planning flow chart, risk matrix reports, FMT report, and so on.

The stakeholders agreed that when these processes are embedded in the new system and are well managed through robust engagement among management leaders who are held accountable to each job function of the execution process, then the outcomes would enhance project performance. Stakeholders' engagements are critical, and their influences are important (Leroy et al., 2010). The findings revealed that mid-level management engagement under a management system will, however, be driven by the capital expenditure (CAPEX), scope and complexity on the projects. For example,

during phase 5 of the AR learning phase, one of the research sites (research site #2) was able to cut down on schedule overruns and cost overruns when each stakeholder understood their own legal and contractual obligations to the project and were willing to execute their own function without compromise because the constraints around contractual obligations had been discussed at a prior meeting. The study revealed that if there is clear understanding of contractual obligations by those who are the key stakeholders and who are able to disseminate the information to the senior stakeholders, project performances will be enhanced (Mitchell et al., 2020).

5.4 Management Strategies to identify Non-Compliances and Gaps in IMS Processes

When stakeholders can align and manage changes, then projects will be better controlled. One of the major actions taken in the study was on the aspect of alignments. One of these actions was centered on the communication and dissemination of information among project team members to ensure alignment. The study suggested that, when stakeholders have adequate alignment and regular follow up meetings, then the delivery of the project will be enhanced and will be able to meet or exceed the objectives of the project. I can conclude that stakeholders must properly understand what they are responsible for and advise senior level management team of any change to their project scope. This includes unsatisfactory project deliverables or unapproved change requests that may later impact project outcomes. Clear and concise understanding of client requirements through regular alignment meetings will ensure clarity of scope and ongoing review of the project.

It was also revealed at the quarterly senior stewardship meeting held on December 5, 2019 that, when stakeholders pay close attention to the various arms of the IMS relating to activity planning, schedule management, cost management, risk management and others, then the process can be effectively monitored and controlled and will lead to successful project outcomes. This confirms that the project will be completed within targets, including meeting all budget implications (Killen et al., 2018). In essence, a lack of a stringent cost management strategy in the overall scheme of the IMS processes

by stakeholders will expose the project to a number of risks, including exceeding the approved budget by an amount the client may not reimburse, and this may weaken client relationships.

The study revealed that stakeholders have to develop a more robust communication strategy, including making information available to other stakeholders throughout the project, as well as expediting processes for information to be created, distributed, acknowledged and understood through meetings, focal discussions and FMT review meetings. The result revealed that providing the stakeholders with regular consistent communication throughout the life of the project will lead to a greater understanding of project performances and create awareness of the project health. In achieving this objective, there must be proper implementation of training, project procedures and IMS processes through continuous engagement and close collaboration with functional and operational leaders.

Moreso, the participants agreed that, when adequate skills are present, then the individual stakeholders can understand their own roles more closely and can identify non-compliances and gaps in projects that are especially complex. The study revealed that specific trainings are necessary for stakeholder's skills development for an improved IMS to work. The study revealed that skills assessment and project performance are synonymous, and a lack of skills can be the difference between a highly successful project and one that is not (Chau, 1997).

In other aspects of the research findings, managing risks was deemed vital. It was indicated that, when risk challenges are identified and the approaches to mitigate them are carefully mapped using a risk matrix, from multiple stakeholder viewpoints, then project performance will be enhanced. During the project delivery audit meeting on November 12, 2019, I provided the auditor with risk mitigation measures established through this study to support our ISO 9001 recertification (refer to Table 10). The ISO recertification was successful on completion.

This study emphasized that early engagement contributed to the successful execution of projects but most importantly supported the selection of critical projects at the opportunity/proposal phase. These included set goals at the outset of our projects, stemming from the proposal selection phase. It allowed

the creation of an opportunity submission form in our corporate dynamics system, that now formed a critical component of our IMS; system for recording our project information, completing an IMS review of the opportunity identified and seeking the designated authority approval from the designated management leader before proceeding with such opportunity.

Others to ensure portfolio selection and management was present, was the use of the improved risk and opportunity approval process and the risk matrix developed in Tables 10 and 11 and Figures 11 and 12 that allowed the stakeholders to indicate which opportunity is able to progress to the project stage. The development of kick of meetings and follow up meetings where all relevant stakeholders are engaged in the discussion and review process of the proposals through the Project Review Committee (PRC) also ensured the resources were well managed as depicted by Tables 8 and 9.

Finally, to ensure alignment with the stakeholders on the IMS processes, there were stewardship meetings held among management with regards to the appropriate documentations required to support our project development phases (front end loading) and our project execution phases (tail end). These documentations were reflected in our construction business unit receiving its ISO 9001 recertifications. The recertifications demonstrated that the sustainability of our business processes would consistently be guaranteed when stakeholders are totally compliant. This was also evidenced in our increased profit margins from 15% to 18% and the renewed confidence that the improved IMS processes have now presented to our clients with regards to our excellence in project delivery.

5.5 Using KPI Improvements to drive Project Performance

Key performance indicators (KPIs) are major metrics that have been used over the years in tracking project performance. However, the study revealed that beyond using the KPIs, there must be clear expectations of the client's needs prior to using KPIs on projects. The stakeholders must understand clearly their schedule expectations, the budget expectations and a well documented process, such as monthly financial tracking mechanisms and scorecard stewardship process established to remove any form of biases in the process (Nguyen, 2020). That understanding also mean knowing what the client

wants and their order of priority. The study revealed a generic order will be schedule, cost, safety and quality and a combination of these metrics will reduce losses and remain an effective approach to improve project performance. This therefore extended the existing theory in this area.

On project schedule management, stakeholders agreed that a schedule process should be one that is continuous and iterative and taken in parallel with the project's execution. Managing the schedule is essential, to confirm that activities are being completed on time and that the project is on-track to meet deadlines (Larsen, 2015). Stakeholders can do that by comparative analysis of the baseline schedules and the working schedules. Also, stakeholders understood that identifying and monitoring project schedules would require consistent review of the schedules during project development and execution, so that there could be a thorough assessment whether or not the schedule needs to be optimized further (Meier, 2008). This can be achieved by understanding the triggers that generated the gaps in the schedule in the first place (Nepal et al., 2006). Stakeholders can do this through development of an appropriate monitoring system such as a cost and schedule report to prevent cost and schedule overruns.

5.6 Contributions to Knowledge: Theoretical and Practical Implications of the Findings

This study confirmed the existing theory around alignment of stakeholders to support project execution (Olander and Landin, 2005). The research study extends the theory to integrating a feedback process among key stakeholders when managing and monitoring compliances to IMS processes. In literature, there is the assumption that, when new staff are employed, they come with existing experience that would serve them well within the organization. However, the research study showed this is not the case, as those who are to manage projects should be adequately trained and should be governed by robust IMS processes.

The study proposes an improved framework that utilizes stringent audit mechanisms to audit managers for the implementation of the improved IMS processes. This extends the existing theory regarding IMS process implementations and will contribute to a higher level of satisfaction in the use of an improved IMS within the organization (Genaro and Loureiro, 2015). The concepts of auditing

managers and their work regularly is a step towards expanding organizational view of the relevance of stakeholders when building an IMS system and its processes. This is an additional contribution to knowledge through this study.

Another contribution to knowledge was around the development of a robust way to increase profitability in projects. The study asserts that profitability is not just tied to a cost-versus-budget relationship (existing theory) but linked to how accountable the stakeholders are, when delivering project cost outcomes. For example, do they put their own interests before those of the organization? Or will the stakeholders accept ownership of their own actions and take responsibility for any financial gaps in the process? This study validates and confirms that proper stewardship will position the organization to achieve the most profits if the stakeholders take responsibility for cost monitoring through their own actions. It also extends the theory to suggest that, when the interests of the stakeholders align with those of the organization and are prioritized, it would be easier to set achievable and sustainable social, environmental and economic targets otherwise known as sustainability-related targets (Silvius and Graaf, 2018).

This research also extended the existing theory around strategy selections to improve project performance. In the extant literatures, there have been several theoretical underpinnings that cost should be the most important KPIs in project delivery. There were several arguments around cost and schedule management being the most critical KPI and the need to have proper schedule stewardship among stakeholders was deemed crucial (Olander and Landin, 2005). While the study agreed that cost and schedule may be of priority to the construction industry, the schedule deliverable was considered a major indicator in a project-based construction organization when it comes to effectively monitoring projects. It does, however, suggest establishing a clear expectation at the start of the project regarding the schedule mechanism to adopt.

5.7 Reflections and Learnings

After completing this phase of my research work, I reflected on the findings of the research study and the different arguments raised from the study and literature and felt they were thought provoking.

Some of these findings and discussions centered on establishing a thorough HSSE plans to regulate project safety requirements, formulating a robust cost tracking system to monitor costs and reduce cost variances, proper stewardship among stakeholders and setting clear expectations that eliminates biases among stakeholders. Others include understanding the significance of adequate training of staff who utilizes a project system and establishing how and why stakeholder engagements must always be well planned and coordinated to yield project management excellence.

I understood more clearly how management system works, importance of working collaboratively to cut down process gaps and non-compliances in order to boost profitability, enhance client confidence level and inspire team to excellence (Horn, 2000). I learnt the value of information sharing and proper documentations as backups for audit purposes. I appreciated the importance of stewardship and audit meetings and value the benefits derived from them.

I and my team and my superiors now understand more, what it means to create value for a client, deal with and manage ambiguities for our organization using an AR process especially around an integrated management processes that govern the way we work and do business. I have also come to appreciate more the lessons and lasting confidence we can build through a collaborative healthy relationship with stakeholders and how this can generate ongoing business opportunities and cut down unnecessary risks for the organization and for our project clientele. Above all, the division now appreciate the value of effective communication and what it means to set targets and work towards them to generate learnings for myself as a scholar practitioner and other stakeholders.

CHAPTER SIX
CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

This action research was undertaken to examine how the performance of construction projects can be improved through stakeholder management in a construction organization. The objective of this research study was to generate actionable knowledge in which future construction projects would be executed in compliance to an improved integrated management system (IMS) to the benefits of the organization.

The qualitative action research used for this study provided a robust way to gather in-depth insights, knowledge and perspectives using semi-structured interviews with eight participants. This allowed the participants to reflect on factors driving non-compliances to our IMS processes, level of stakeholder engagement required, strategies that can be employed to improve project performance and how the proposed action plans identified by the stakeholders can be implemented to improve key performance indicators (KPIs) on construction projects.

This chapter also discussed how the research objectives was achieved, it discussed the study reflections over the course of the research study and how this has contributed to my development as a researcher. Finally, this chapter discussed the limitations of the research study and provided recommendations for future improvements.

6.2 Study Conclusions

This research study was aimed at answering the following research questions:

Research Question 1

What factors influence stakeholder engagement during project development and execution and how can these stakeholder engagements be enhanced to improve project performance?

The participants were very supportive all through the action research cycle phases and all the above questions were answered. The study revealed that mid-level stakeholder engagement under an

integrated management system is highly critical and will be driven by factors such as the capital expenditure (CAPEX) on the project, the scope of the project and the complexity of the project measured in terms of; its dollar values, its interrelated project components and interdependencies. To improve project performance through that engagement, the study revealed that effective communications among the stakeholders, strong alignment among all stakeholders, proper information sharing and regular follow up meetings, that values the contributions of all stakeholders in the decision-making process is critical (D'Herbemont and Cesar, 1998).

Research Question 2

What management strategies should be employed by mid-level stakeholders to address non-compliance issues and fix reoccurring gaps in our IMS processes?

The study revealed that a number of management strategies would address non-compliance issues and fix existing IMS process gaps. This includes early engagement by stakeholders to discuss non-compliances and process gaps. The study suggested, this can be achieved through stakeholder stewardship meetings, where stakeholders can discuss issues, review challenges, and map out robust approaches to address them. Other strategies the study proposes are building a properly integrated project teams to address gaps. This would require project teams working collaboratively to address these issues in compliance with the organization IMS process requirements. Senior management can equally demonstrate strong leadership through timely review and signing of project documents that are more likely to generate non-compliances and implement an efficient governance and assurance system to monitor project changes.

Research Question 3

How can the proposed action plans identified by the stakeholders be implemented to improve key performance indicators (KPIs) on construction projects?

The study revealed that one of the best ways to improve key performance indicators (KPI) on a construction project is understanding the technical, economic, commercial, organizational and

political (TECOP) requirements of the project, running project economics to determine project viability, development of a robust financial management tracking (FMT) system to monitor costs and reduce cost variances, reviewing project opportunities early, setting clear expectations to eliminate biases and adopting stringent audit processes to hold stakeholders accountable.

The study recommends improving existing Authority and Responsibility (ARM) matrix to include the names of all authorizing stakeholders, showing individual approval limits and extending the project manager signing authority to save time during execution. It proposed the development of a risk matrix to monitor risks and evaluate its mitigating factors, development of a robust health, safety, security and environmental (HSSE) planning flow process to monitor and control safety and environmental issues for all project complexities and recommends adequate training for all IMS process users to improve knowledge and increase learning opportunities.

In addition to answering the research questions above, the study has succeeded in achieving the following research objectives:

1. To develop action plans that would reduce mid-level stakeholder non-compliances with the use of the organization integrated management system (IMS).
2. To evaluate how the action plans would enhance key performance indicators and improve construction project performances.
3. To generate actionable knowledge in which construction projects are executed in compliance with an improved integrated management system to the benefit of the organization, while increasing profitability (Tenkasi and Hay, 2004).

Research Objective 1

This objective was achieved by engaging stakeholders in project meetings to discuss the identified non-compliances reported in Table 1. The purpose of these meetings was to discuss why these issues have continued to be a challenge as shown in the 2017 audit report in Figure 3. This includes improper documentation reviews, change orders not authorized before proceeding with work, agreement

contracts not reviewed by the contract approval group (CAG) nor agreed to by the designated senior stakeholders before proceeding, unapproved contractors engaged to execute work among many others.

The study showed that these gaps and non-compliances can be corrected by designating a robust review process in which senior stakeholders would sign off on project documents before they are passed on to clients for acceptance, change orders are properly signed, authorized and documented before proceeding with a proposal submission to a potential client or subcontractor. Contract reviews verified and validated to ensure all contractual agreements have been duly reviewed and approved not just by the contract approval group (CAG) but by the designated project director before proceeding with the project. The literature findings also supported this, when it argued that the creation of a more elaborative and detailed management process that has been evaluated and tested should reduce non-compliances (Achterkamp and Vos, 2008).

The findings showed that these non-compliances can be reduced through stakeholder engagement and instituting proper stewardship at the planning phase through optimization up to the execution phase. There were also other strategies the findings showed was helpful to achieving this objective. This includes development of a robust health and safety construction planning process showed in Figure 11, that helped to mitigate field related gaps based on risk levels and supported the creation of the required deliverables compatible to a project risk level.

As the researcher, I can conclude that these achievements were possible because stakeholders developed these action plans and took responsibilities for their actions to drive the performance of their projects. There is therefore the indication that stakeholder accountability, proper stewardship and robust actionable plans would reduce non-compliances and increase project performances.

Research Objective 2

This objective was satisfied because there were evidences that the evaluated plans impacted our KPIs and improved project performances. For example, the financial management tracking system-

controlled costs effectively at project sites #1, #2 and #4. The tracking of costs using alternative methods such as HeavyJob during actual field execution and HeavyBid during the proposal phase was also critical to project performance. One way the study showed this impact was by developing the comprehensive cost report shown in Table 7 and the development of a proposal evaluation criteria as shown in Table 13 to support evaluation and track cost more closely. This helped to reduce unnecessary cost variances at the three project sites #1, #2 and #4 taking lessons from project site #3. According to the findings, setting clear expectations from the proposal phase and adequately developing a financial management tracking (FMT) system has contributed to controlling and monitoring cost variances that later increased profitability.

The construction safety planning process shown in Figure 11 also reduced project risks at all project sites and created an elaborate process in which project risks could be matched with appropriate project deliverables. The creation of this elaborate construction safety planning process contributed to improving performance as it provided a basis to effectively manage safety related risks.

The findings showed that the development of baseline schedules and working schedules and continuous reviews with the client and other key stakeholders at the project sites early enough, to track project progress contributed to improving project performances. The findings also showed that when stakeholders adequately allot time to project work and meet regularly to discuss schedule requirements and progress, there was a high likelihood of success.

Achieving this objective proved that schedule variances can be curtailed, large cost variances can be avoided and safety related risks can be managed to enhance project successes. It further proved that KPIs are still effective metric for measuring project performance and works well if stakeholders understand their project requirements early.

Research Objective 3

This objective was satisfied by taking actions, implementing those actions and evaluating the performance of those actions over the course of my study to generate actionable knowledge; “the

generated knowledge is implementable by the users whom it is intended to engage" (Antonacopoulou, 2006). In other words, the knowledge generated through this study was put back to immediate use by the stakeholders and it improved our project performance and increased our profitability (Tenkasi and Hay, 2004).

The findings showed that an improved management processes should be one that is clearly understood and one that offered the stakeholders a coordinated approach to project delivery. It should be seen as a tool rather than an obligation through the lens of the stakeholders. To do that, the findings showed that stakeholders must set an agreeable profit targets and pay attention to how those change over the life cycle of the project. When these profit targets are known early and expectations are clear, the stakeholders can accurately reflect on both internal and external costs changes more accurately, capture financial risks early, discuss them and used them as a measure to drive profitability.

The study however showed that profitability would not however be driven by just a cost-versus-budget relationship but would be driven by other human factors such as the behaviour of the stakeholders (Horn, 2000). The argument here was that underreported projects where stakeholders showed less regards for project safety and quality generated additional losses and impacted profitability, as reflected more in project site #3.

The researcher suggested that the ability to enhance future project performances would therefore be driven by the stakeholders' behavioural influences, efforts and interests (Betran et al., 2017). Lead stakeholders must ensure interests are devoid of bias that can affect project performances. Stakeholders must take responsibilities and must be accountable for the performance of their own projects. They must deviate from a mere focus on just the profit, but focus more on relationship building and engagement to identify areas of potential profit losses starting from RFP stage. To enhance this, resources must be properly allocated by senior management to yield meaningful results.

Conclusively, these actionable knowledge was generated through the development of an improved authority and responsibility matrix (ARM) to hold stakeholder accountable for their tasks (refer to

Table 8), the development of a risk matrix to capture unidentified risks early (refer to Tables 11, 12 and Figure 12), the development of a construction planning flow process to match project risks with deliverables (refer to Figure 11), and the development of a financial management tracking (FMT) system to monitor cost variances and increase profitability (refer to Table 7).

6.3 Study Reflections

I found working as an insider researcher both interesting and challenging in this study. I can appreciate this, even more at the completion of this study. The time and constraints that comes with the research and the benefits it offered me, my division and our organization, is something I am very pleased and proud of. The action research methods generated new knowledge through constant constructing, action planning, action taking and evaluations. My work-based problem on improving project performance through stakeholder management was particularly unique and at the same time complex. There were challenges of time management and working under several policies, procedures, requirements and theories that I had to review, familiarize myself with and integrate into my research work.

In the course of the study, I researched several underpinning theories such as stakeholder total performance theory, stakeholder accounting theory, behavioural stakeholder theory, public policy theory, ethical theory, stakeholder management approach and its way in managing stakeholder needs including a review of the literature on a number of project and construction driven issues, their impacts and how they shape construction outcomes. These were all relevant to shape my thoughts and to provide more clarity to my study of the existing theories, and past works related or connected to my study.

A few of the construction issues were planning issues, management skills issues, portfolio management issues and sustainability related issues (Worsley, 2016). I now recognize that as a senior stakeholder managing a team of professionals, I must first identify and recognize all these issues, identify my stakeholders and work with them to achieve my desired research results. Olander (2017)

argued that the fundamental tenets of stakeholder management is knowing, understanding, prioritizing and engaging with the stakeholders.

This study demonstrated that proper stewardship, establishing project expectations, development of robust tools such as ARM and FMT helped to increase project cost efficiencies, reduced risks, optimized schedules and established a sustainable IMS process through which mid-level stakeholder non-compliances was significantly reduced. This helped to solve many construction issues at the project sites and allowed the projects to be executed in the most efficient and sustainable manner.

It was further evidenced that the development of the responsibility matrix shown in Table 8 allowed the proper allocation of resources and supported the development of communication strategies that according to the research study enabled stakeholders to know what to do, in terms of their specific functions, the frequency of their engagement and the recommended delivery method the stakeholders must employ to achieve project goals.

Other evaluation criteria proposed by the study to meet the sustainability and portfolio expectations required building clear work plans, developing the capabilities of the project team through training and setting clear responsibilities with individual stakeholder on respective project sites. This includes properly matching their experiences and competencies to bring out their best abilities, to serve the critical needs of the projects rather than embedding the stakeholders into roles and assignments outside their areas of expertise. This approach required developing a risk ranking profile for all stakeholders using robust rating metrics, that would allow the mid-level stakeholders to be risk-rated prior to overseeing one or more technical projects or discipline areas. Or in the case of contractors, an evaluation of the contractors' capabilities and experience on the basis of HSSE stats, financial stabilities and other relevant factors as shown in Table 13.

As a scholar practitioner and a management leader, the study has enhanced my leadership skills and has equipped me with new knowledge and skills required to deal with complex issues. It has added significant value to the work that I do. I believe I have acquired strong problem-solving skills and

now in a better position to lead large integrated teams, comprising of several diverse managers and/or directors.

I have also gained significant research knowledge and sound critical reasoning abilities that has allowed me to engage closely with diverse stakeholders across my construction organization, learning more about mid-level stakeholder specific contributions to our business process. These learnings have equipped me with the management skills I need to develop new tactics, develop, refine or implement changes to our business processes. This has been a humbling experience of a lifetime, that has not only helped me to grow personally and professionally, but has given me a new perspective to the way I reason, think and solve problems. I am encouraged that over the course of this research study, I have made significant contributions to my organization to improve the performances of our projects. More importantly, I am pleased that the findings from this research, the actions taken, and the changes and knowledge generated through this, have continued to benefit the larger organization and our clients in a strategic way. It has continued to support the growth of our project portfolio and our drive to pursue new opportunities has been enhanced.

In summary, this research study has generated new actionable knowledge, produced new insights that will continue to deliver project management excellence through the organizational changes made. I have seen evidences that our profitability outcomes have increased, non-compliances have been reduced, based on the feedback report received from our March 2020 ISO audits. I am confident, it will continue to foster a more inclusive and collaborative environment now and in the future.

6.4 Study Limitations

This study achieved its objectives and was beneficial to my organization but has a few limitations. First, the study was conducted with a key focus on construction projects in an engineering design (consulting) and construction organization. The behaviour and performance of projects depicted in the study could be different from other industries that are not construction-based or are not governed by construction operating procedures (Loo, 2003). The performance of projects depicted in this study

are mostly limited to a construction organization and there is a possibility that in a design-based organization or a non-stakeholder led organization, there may be a different level of engagement required and a holistic set of divergent factors might govern the performance of such projects including but not limited to different cultural factors, time and capacity of the stakeholders and their management approach (Lunts, 2012).

This study was also focused on four main research sites and sourced data from eight consenting participants. I initially requested 6 internal participants and 4 external participants, but 2 external participants could not participate. Thus, a relatively small sample size of eight consenting participants was used in the analysis phase of this study. While I was able to achieve the objectives of my study, the insights and learning were limited to these eight participants who were mostly from an engineering and project management background. It is possible that if the participants were from a different background, their insights and perspectives may have offered a different line of thought.

Moreso, this research study was based on an existing management processes in a Canadian North American work place environment. A different management framework utilized in a different organization, in a different geographical zone, with inputs from a larger number of participants may provide additional data that might not necessarily change the findings of this study but may offer additional learnings to the ones generated. This will however be dependent on the organization performance evaluation matrices and its governing principles, policies, procedures and requirements (Freeman, 2016).

6.5 Study Recommendations to the Construction Organization

Below are a few recommendations I have proposed in line with the philosophies of an action research project (Coghlan and Brannick, 2014). They are:

6.5.1 Stakeholders Training Recommendations

There was the argument from the study that users of the IMS processes are not well trained to use the system processes and thereby leads to several non-compliances and an erosion of profitability. To avoid this issue, I am recommending that, when assigning stakeholders to projects, there has to be verification of the stakeholders' experience and training records using the approval training checklist provided in the study. If training is lacking or required, the stakeholder must actively pursue such training and ensure the project manager have supporting documentation for the completed training in the event of an audit. If a stakeholder does not obtain appropriate training in time for project execution, the project manager must replace the stakeholder as appropriate.

6.5.2 Project Planning Recommendations

The project manager and her project team in consultation with the project director is responsible for ensuring there are proper plans, and quality driven deliverables in place to improve project performance and enhance KPIs. The study showed that a number of key metrics and deliverables to support that level of engagement was either not available or were available but not implemented early enough to mitigate project risks. This exposes the projects to risks during executions and put more pressure on the project team to rebuild trust with the client, because the KPIs would not have met the intended goal.

I therefore recommend that a project manager must assume adequate authority early on with the project to lead and designate project assignments as required including developing a progress review to track if indeed the project is meeting its intended delivery plan. I propose the following during the project planning phases: Identification of an acceptable metric (e.g. schedules, deliverables, profit expectations) to be identified early to measure project progress against project objectives. Tasks must be clearly defined to achieve the agreed upon project objectives.

A project execution or implementation plan must be developed by the project manager in discussion with his team to identify the complexities of the project and discuss the scope requirements of the

project. The project execution or implementation plan must be reviewed with the project director who would provide senior oversight for the plan and will ensure alignment during the review stages of the project. All project documentation should have approval dates, project numbers, person responsible and must be properly filed in accessible project folders on the organization SharePoint.

6.5.3 Financial Management Recommendations

Financial management of the project is critical and would ultimately determine the level of profit and losses that would be realized on the project. The study showed there were financial tracking gaps including the lack of a cost tracking process nor a responsibility matrix, risk classification matrix nor an acceptable evaluation criterion for a project under a subcontractor management system. If these were present, they would have clearly identified the cost variances, opportunities for savings and would have provided additional information regarding the project sites, current budget expenditure and actual progress rather than when there is little to be done at a 75% completion stage.

I would therefore recommend the following behavioural changes: Provide a weekly, monthly cost stewardship to stakeholders to detail what was budgeted, how much was spent, how it was spent, and show variances against targeted amounts and actual amounts and compare these to address variances. Have senior management approval from as high as the national leader of the construction operations prior to preparation of all proposals and/or changes to project change orders valued over $1M for proposals and $100K for change orders. I also recommend the improvement of the current ARM and ROA for all proposal efforts with no restrictions. Currently the ARM/ROA has restriction limits. The current practice of completing it for highly valued projects may allow some risks to be uncaptured during the execution process.

The ROA approval should consider providing additional authorizations to the project manager beyond the zero limit for change orders less than $100K. The project manager must be authorized as a co-signatory on a project deliverable and for new opportunity approval reviews as long as it is less than a $1M. This can be done with the project director providing critical reviews in situations where

the project manager is not capable to independently make such approvals. We must develop a stringent annual audit process to keep project performance in check under an improved management system. This would require completing audit reviews twice in a year, during both Q1 and Q3 prior to the annual ISO review and recertifications by the external auditors at Q4.

6.5.4 Project Health, Safety and Loss Management Recommendations

Stakeholders' engagement was considered highly critical to support projects overall health and safety and minimise losses. The study talked about the need to properly manage stakeholder stakes and interests to facilitate early discussions of pertinent health and safety issues, using robust subcontractor management strategies, resource reviews and thorough scorecard stewardship meetings (Stout, 2012). It overstressed that if stakeholders fail to integrate these factors properly, projects are at risk of significant construction project failures (Rondinelli and London, 2002). There is also a higher tendency the stakeholder relationships would collapse and project losses would be inevitable if such communications are not well managed (PMI, 2016).

Therefore, I am recommending performing subcontractor prequalification before selection and not mere preference selections as it is currently done. Obtaining written request for all budgetary estimates and equipment availability, resource matching and seeking project notice requirements from all subcontractors. Building both a baseline schedule and working schedule that can be matched with ongoing project progress on a weekly basis or bi-weekly basis to prevent losses. Stating all assumptions on which a schedule was based on, to allow proper management of the schedule in case of variations along the project life cycles. Having stakeholders risk ratings reviewed and making stakeholders accountable for their own risk ratings reviews, by allowing them to be audited with no exceptions to project size. Allowing stakeholders to be properly matched based on both their past work experience and their risk rating which should be reviewed on an annual basis.

REFERENCES

Aaltonen, K. and Kujala, J. (2010) 'A project life cycle perspective on stakeholder influence strategies in global projects', *Journal of Management,* 26(4), pp. 381–397.

Abidin, N. Z., Yusof, N., and Othman, A. (2013) 'Enablers and challenges of a sustainable housing industry in Malaysia, Construction Innovation': *Information Process Management*, 13(1), pp.10 – 25.

Achterkamp, M. and Vos, J. (2008) 'Investigating the use of the stakeholder notion in project management literature, a meta-analysis', *International Journal Project Management,* 26(2), pp.749–757.

Argyris, C. (2004) *Actionable Knowledge* in H. Tsoukas and C. Knudsen (Eds), The Oxford Handbook of Organization Theory: Meta Theoretical Perspectives, Oxford: Oxford University Press, pp. 432-452.

Alvesson, M., Hardy, C., and Harley, B. (2008) 'Reflecting on reflexivity: reflexive textual practices in organization and management theory', *Journal of Management Studies,* 45(3), pp. 480-501.

Antonacopoulou, E. (2006) *Actionable Knowledge*, International Encyclopaedia of Organization Studies, London: Sage., Management School, University of Liverpool, United Kingdom.

Asif, M., Searcy, C., Zutshi A., and Fisscher, O.A. (2013) 'An integrated management systems approach to corporate social responsibility', *Journal of Cleaner Production*, 56, pp. 7-17.

Baert, P. (2005) *Philosophy of the Social Sciences: Towards Pragmatism*, Cambridge, UK: Polity Press.

Barnett, M.L. and Salomon, M.L. (2006) 'Beyond dichotomy: The curvilinear relationship between social responsibility and financial performance', *Strategic Management Journal*, 27(11), pp. 1101-1122.

Bella, B. (2011) Cost overruns and time delays in highway and bridge projects in developing countries. Experiences from Cameroon. A Thesis Submitted to Michigan State University, ProQuest Dissertations Publishing.

Beltran, P.A., Garcia-Melon, M., and Valera, M. (2017) 'How to assess stakeholder's influence in project management', a proposal based on Analytical Network Process, *International Journal of Project Management,* 35, pp. 451-462.

Beringer, C., Jonas, D., and Kock, A. (2012) 'Behaviour of project stakeholders in Project Portfolio Management and its impact on success', *International Journal of Project Management,* 31, pp. 830-846.

Beritelli, P. and Laesser, C. (2011) 'Power dimensions and influence reputation in tourist destinations: empirical evidence from a network of actors and stakeholders', *Tourism Management*, 32(6), pp. 1299-1309.

Blaikie, N. (2000) *Designing social research*, 1st ed. Cambridge: Polity Press.

Braun, V. and Clarke, V. (2006) 'Using thematic analysis in psychology', *Qualitative Research in Psychology,* 3, pp. 77-101.

Braun, V. and Clarke, V. (2013) 'Teaching thematic analysis: Overcoming challenges and developing strategies for effective learning', *The Psychologist,* 26(2), pp. 120-123.

Björkman, H. and Sundgren, M. (2005) 'Political entrepreneurship in action research: learning from two cases', *Journal of Organizational Change Management*, 18(5), pp. 399-415.

Brydon-Miller, M. and Greenwood, D. (2006) 'A re-examination of the relationship between action research and human subjects review process', *Action Research*, 4(1), pp. 117–128.

Brozo, W.G. (2011) *Action Research*, Newark, DE: International Reading Association.

Bosse, D. A. and Coughlan, R. (2016) Stakeholder relationship bonds, *Journal of Management Studies,* 53(7), pp. 1197–1222.

Bourne, L. (2009) 'Stakeholders relationship management, a maturity model for organization implementation', Gower Publishing, Farnham.

Bourne, L. and Walker, D.H.T. (2006) 'Visualizing stakeholder influence-two Australian examples', *Project Management Journal*, 37(1), pp. 5-22.

Cennamo, C., Berrone, P., Cruz, C., and Gomez-Mejia, L. R. (2012) Socioemotional wealth and proactive stakeholder engagement: Why family-controlled firms care more about their stakeholders, *Entrepreneurship Theory and Practice,* 36(6), pp. 1153–1172.

Chau, W.K. (1997) 'The ranking of construction management journals', *Construction Management Economics*, 15(4), pp. 387-398.

Clendenin, D.J. and Connelly F.M. (2000) 'Narrative Inquiry: Experience and story in qualitative research', *Journal of Management*, Jossey Bass, San Francisco, pp. 211.

Cohen, A. and Bradford, D. (1989) 'Influence without authority: the use of alliance, reciprocity, and exchange to accomplish work', *Organizational Dynamics*, 17(3), pp. 5-17.

Connell, A. and Nord, W. R. (1996) 'The bloodless coup: The infiltration of organization science by uncertainty and values', *Journal of Applied Behavioral Science*, 32: pp. 407- 427.

Comfort, L.K., Sungu, Y., Johnson, D. and Dunn, M. (2001) 'Complex systems in crisis: Anticipation and resilience in dynamic environments', *Journal of Contingencies and Crisis Management*, 9(3), pp. 144–158.

Coghlan, D. and Brannick, T. (2014) *Doing action research in your own organization*, 4th ed. London, England: Sage Publications.

Coghlan, D. and Shani, A. (2008) *Insider Action Research: The dynamics of developing new capabilities*, 2nd ed. The Sage Handbook of Action Research, Sage Publications.

Cochran-Smith, M. and Lytle, S. L. (1999) 'Relationships of knowledge and practice: Teacher learning in communities. In A. Iran-Nejad and P. D. Pearson (Eds.), *Review of research in education,* Washington, DC: American Educational Research Association, 24, pp. 249-305.

Comfort, L.K., Sungu, Y., Johnson, D. and Dunn, M. (2001) 'Complex systems in crisis: Anticipation and resilience in dynamic environments', *Journal of Contingencies and Crisis Management*, 9(3), pp. 144-158.

Cotton, A., Gray, L., and Maas, W. (2017) Learning from the Shell Peterhead CSS Project Front End Engineering Design, *13th International Conference on Greenhouse Gas Control Technologies*, Energy Procedia, 114, pp. 5663-5670.

Coughlan, P. and Coghlan, D., (2002) 'Action research for operations management', *International Journal of Operations and Production Management*, *22*(2), pp. 220-240.

Craddock, W. T. (2015) 'Change management in the strategic alignment of project portfolios', *PMI White Papers*.

Craddock, W.T. (2013) *How business excellence models contribute to project sustainability and project success* in: Silvius, A.J.G., Tharp, J. (Eds.), Sustainability integration for effective project management, IGI Global Publishing.

Crawford, L. H. (2013) *Leading sustainability through projects*, In G. Silvius & J. Tharp (Eds.), Sustainability integration for effective project management (In Press). Hershey, PA: IGI Global.

Creswell, J. V. (1998) *Qualitative inquiry and research design*: *choosing among five traditions*, Thousand Oaks, CA: Sage Publications.

Cunliffe, A.L. (2003) 'Reflexive inquiry in organizational research: Questions and possibilities', *Human Relations*, 56, pp. 983–1003.

Davis, K. (2016) 'A method to measure success dimensions relating to individual stakeholder groups', *International Project Management Journal*, 34(3), pp. 480–493.

De Schepper, S., Dooms, M., and E. Haezendonck (2014) 'Stakeholder dynamics and responsibilities in public–private partnerships: A mixed experience', *International Journal of Project Management* 32(7), pp. 1210–22.

D'Herbemont, O. and Cesar, B. (1998) *Managing sensitive projects, A lateral approach*, Basingstoke, Hampshire: Macmillan Press Ltd.

Dougherty, D., Borrelli, L., Munir, K. and O'Sullivan, A. O. (2000) 'Systems of organizational sensemaking for sustained product innovation', *Journal of Engineering and Technology Management*, pp. 321-355.

Dubois, A. and Gadde, L.E. (2002) 'Systematic combining: an abductive approach to case research', *Journal of business research*, *55*(7), pp. 553-560.

Dunham, L. D., Freeman, R. E., and Liedtka, J. (2006) 'Enhanced stakeholder practice: A particularized exploration of community', *Business Ethics Quarterly*, 16(1), pp. 23-42.

Easterby-Smith, M., Thorpe, R., Jackson, P., and Lowe, A. (2012) *Management Research,* 4th ed. London: Sage.

Eble, K. (1988) The Craft of Teaching, London: Jossey-Bass.

Eskerod, P. and Jepsen, A.L. (2013) Project Stakeholder Management, Gower Publishing, New York, NY.

Fink, S. (1986) 'Crisis Management: Planning for the Inevitable', *American Management Association*, New York, NY.

Flyvbjerg, B. (2008) 'Public Planning on Mega-Projects: Overestimation of demand and underestimation of costs in Priemus', H., Flyvbjerg, B., Wee, B.V. (Eds.), *Decision making on mega-projects*, Edward Elgar, Northampton, MA, pp. 120-144.

Flyvbjerg, B., Holm, M. S., and Buhl, S. (2002) 'Underestimating costs in public works projects: Error or lie?' *Journal of Management*, Planning Association, 68(3), pp. 279–295.

Franken, A., Edwards, C., and Lambert, R. (2009) Executing strategic change: Understanding the critical management elements that lead to success, *California Management Review*, 51(3), pp. 49-73.

Freeman, E.R. (1984) *Strategic Management: A Stakeholder Approach*, Pitman, Boston, MA.

Freeman, E.R. (2007) 'Five challenges to stakeholders' theory: A report on research in progress, *Stakeholder management, business and society'*, 1, pp. 1-20.

Freeman, E. R. (2010) 'The politics of stakeholder theory: Some future directions', *Business Ethics Quarterly*, 4, pp. 409–421.

Freeman, E. R. (2016) 'Short term vs. long term: A skeptical view and an alternative', *Boards and Directors Annual Review*, pp. 83–84.

Freeman, E. R., Harrison, J. S., Wicks, A. C., Parmar, B. L., and de Colle, S. (2010) *Stakeholder theory: The state of the art*, Cambridge: Cambridge University Press.

Friedman, A. L. and Miles, S. (2002) 'Developing a stakeholder theory', *Journal of Management and Studies*, 39(1), pp. 1-21.

Friedman, A. L. and Miles, S. (2006) *Stakeholders Theory and Practice*, Oxford University Press.

Friedman, V. J. and Rogers, T. (2009) 'There is nothing so theoretical as good action research', *Action Research,* 7(1), pp. 31-47.

Frooman, J. (1999) 'Stakeholder influence strategies', *Academy of Management Review*, 24(2), pp. 191-205.

Frooman, J. and Murrell, A.J. (2005) 'Stakeholder influence strategies: the role of structural and demographic determinants', *Business & Society,* 44(1), pp. 3-31.

Fueyo, V. and Koorland, M. A. (1997) 'Teacher as researcher: A synonym for professionalism', *Journal of Teacher Education,* 48(1), pp. 336-344.

Fuller, P.A., Dainty, A.R.J., MacDonald, R., Thorpe, A. (2009) 'Event-based measurement of learning in projects, *In*: Dainty', A. (Ed) *Proceedings of the 25th Annual Association of Researchers in Construction Management (ARCOM) Conference*, Belfast, Association of Researchers in Construction Management, 2(5), pp. 713-714.

Gareis, R., Huemann, M., and Martinuzzi, A. (2013) 'Rethinking Project Management with Sustainable Development Principles', *Project Management Institute*, Newtown Square, PA.

Genaro, A.F. and Loureiro, G. (2015) 'Stakeholder Management as an Approach to Integrated Management System', National Institute for Space Research, Transdisciplinary Life Cycle Analysis of Systems, 1, pp. 31-40.

Gianni, M. and Gotzmani, K. (2015) Management systems integration: lessons from an abandonment case, *Journal of Cleaner Production,* 1, pp. 265-276.

Gibson, G. E., Wang, Y., Cho, S., and Pappas, M. P. (2006) 'What is pre-project planning, anyway?' *Journal of Engineering Management,* (35), pp. 35-42.

Gleeson, D. and Knights, D. (2007) 'Reluctant leaders: an analysis of middle managers' perceptions of leadership in further education in England', *Leadership Journal*, 4(1), pp. 49-72.

Gomes, R.C., Liddle, J., and Gomes, L. (2010) 'A five-sided model of stakeholder influence', *Public Management Journal,* 12, pp. 701–724.

Green, J. (2000) 'Understanding social programs through evaluation in N. Denzin and Y. Lincoln (Eds.)', *Handbook of Qualitative Research*, 2nd ed., London, England: Sage., pp. 981-999.

Greenwood, D.J. and Levin, M. (2007) *Introduction to Action Research,* 2nd ed. Thousand Oaks, California: Sage.

Goodenough, D., Albert, P.C., and Chan, Ayirebi D. (2017) 'A review of stakeholder management performance attributes in construction project', *International Journal of Project Management* pp. 1037-1051.

Guba, E. G. and Lincoln, Y. (1989) *Fourth generation evaluation*, Newbury Park, CA: Sage.

Gubinelli, S., Cesarotti, V., and Introna, I. (2019) 'The Evolution of Project Management (PM): How Agile, Lean and Six Sigma are changing PM', *The Journal of Modern Project Management,* (7)3.

Hammond, M. and Wellington, J. (2012) Research Methods: The Key Concepts, 1st ed. Routledge.

Hardin, R. (1998) Morality within the limits of reason, Chicago, IL: University of Chicago Press.

Harting, T., Harmeling, S., and Venkataraman, S. (2006) Innovative stakeholder relations: 'When Ethics pays' (and when it doesn't), *Business Ethics Quarterly,* 16, pp. 43-68.

Hatch, M. (1993) 'The Dynamics of Organizational Change', *The Academic of Management Review,* 18(4) pp. 657-693.

Havard, A. (2013) Abduction, deduction and induction: can these concepts be used for an understanding of methodological processes in interpretative case studies, *International Journal of Qualitative Studies* in Education, 1(1), pp. 4-5.

Hennink, M. and Kaiser, B. (2017) 'Saturation in Qualitative Research, *Research Methods*: A Sage Publication Journal.

Hendry, J. (2005) 'Missing the target: Normative stakeholder theory and the corporate governance debate', *Business Ethics Quarterly,* 11(1), pp. 159-176.

Hendry, J. (2005) 'Stakeholder influence strategies: An empirical exploration', *Journal of Business Ethics,* 61(1), pp. 79-99.

Heravi, et al. (2015) 'Evaluating the level of stakeholder involvement during the project planning processes of building projects', *International Journal of Project Management*, 33(5), pp. 985-997.

Hinze, J. and Selstead, G. A. (1991) *Analysis of WSDOT Construction Cost Overruns,* Washington State Department of Transportation, Report No WA-RD 218.1, Olympia, WA.

Hollingsworth, S. (2005) Unpublished manuscript on Action Research: IRA/ESRA.

Horn, R. A. Jr. (2000) 'Providing leadership for the new millennium', *Journal of the Intermountain Center for Educational Effectiveness,* 1(1), pp. 1-6.

Huberman, A. M. and Saldana, J. (2014) *Qualitative data analysis: A methods source book* (3rd ed.), Los Angeles, CA: Sage.

Huber, M. and Scharioth, J. (2006) *Achieving excellence in stakeholder management,* Springer-Verlag Berlin Heidelberg New York.

Jenlink, P. M. (2009) 'The memory of practice and the mirror of theory', *Journal of Leadership Studies,* 3(2), pp. 74-78.

Jepsen, A.L. and P. Eskerod (2009) 'Stakeholder analysis in projects: Challenges in using current guidelines in the real world', *International Journal of Project Management* 27(4), pp. 335–43.

Jensen, J. M., Patel, P. C., and Messersmith, J. G. (2013) 'High-performance work systems and job control: Consequences for anxiety, role overload, and turnover intentions', *Journal of Management,* 39(6), pp. 1699-1724.

Jex, S. M. (1998) '*Stress and job performance: Theory, research, and implications for managerial practice*', CA: Sage: Thousand Oaks.

Johnson, P. and Duberley, J. (2003) 'Reflexivity in management research', *Journal of Management Studies,* 40(5), pp. 1279-1303.

Johnson, R. and Onwuegbuzie, A. (2004) 'Mixed methods research: A research paradigm whose time has come', *Educational Researcher,* 33(7), pp. 14-26.

Jones, S. (1985) 'The analysis of depth interviews, in R. Walker (ed.), *Applied Qualitative Research,* Aldershot: Gower, pp. 56-70.

Jones, T. and Freeman, R. E. (2013) Sustainable wealth creation, '*Working Paper'*, University of Washington and University of Virginia.

Joslin, R. and Müller, R. (2016) 'The relationship between project governance and project success', *International Journal of Project Management,* 34(4).

Kelvin, K. (2001) 'Assessing the strengths and weaknesses of action research', Nursing Standard, 15 (26), pp. 33-35.

Kendig, C. (2016) *Natural Kinds and Classifications in Scientific Practice,* London; New York, NY: Routledge.

Ketokivi, M. and Mantere, S. (2010) *The Academy of Management Review*, 35(2), pp. 315-333.

Killen, et al. (2018) 'Practices, Projects and Portfolios: Current research trends and new directions', *International Journal of Project Management,* 36(5), pp. 762-772.

Kissi, E., Ansah, S. K. (2013) 'Professional Project Management Practices and its Constraints in Developing African Countries: A Literature Review', *Covenant Journal of Research* in the Built Environment (CJRBE), 1(2), pp. 28-40.

Landin, A. (2000) Impact of Quality Management in the Swedish Construction Process, A PhD thesis, Department of Construction Management, Lund University, Lund, Sweden.

Larsen, J. (2015) 'Factors affecting Schedule Delays, Cost Overruns and Quality level in Public Construction Projects', *A Journal submitted to the American Society of Civil Engineers (ASCE),* pp. 2-10.

Leroy, P., Hage, M., and Petersen, A.C. (2010) 'Stakeholder Participation in Environmental Knowledge production, *Futures,* 42, pp. 254–264.

Leung, et al. (2004) ‘Measuring construction project participant satisfaction in construction management economics, *Journal of Management,* 22(3), pp. 319–331.

Leutz, W.N. (1999) ‘Five laws for integrating medical and social services: lessons from the United States and the United Kingdom’, *The Milbank Quarterly,* 77(1), pp. 77-110.

Li, et al. (2013) ‘Evaluating Stakeholder satisfaction during public participation in major infrastructure and construction Projects: A Fuzzy Approach’, 29, pp. 23-135.

Loo, R. (2003) ‘Project management: a core competency for professional nurses and nurse managers’, *Journal for Nurses in Staff Development,* 19(4), pp. 187-93.

Loosemore, M. (2010) ‘Using multimedia to effectively engage stakeholders in risk management’, *International Journal of Managing Projects in Business*, 3(2), pp. 307-327.

Lunts, P. (2012) ‘Change management in integrated care: What helps and hinders middle managers-a case study’, *Journal of integrated care,* 20(4), pp. 246-256.

Maak, T. (2007) Responsible leadership, stakeholder engagement, and the emergence of social capital, *Journal of Business Ethics,* 74(4), pp. 329–343.

Manowong, E. and Ogunlana, S. (2010) ‘Strategies and tactics for managing construction Stakeholders in Chinyio E. and Olomolaiye P. (Eds)’, *Construction Stakeholder Management,* Wiley-Blackwell, Oxford, UK, pp. 121-137.

Mansell, P. and Philbin, S. (2020) Measuring sustainable development goal targets on Infrastructure Targets, *Journal of Project Management,* 8(1), pp. 42-63.

McGrath, S.K. and Whitty, S.J. (2017) ‘Stakeholder defined’, *International Journal of Managing Projects in Business,* 10(4), pp. 721-748.

Meding, J. V., McAllister, K., Oyedele, L., and Kelly, K. (2013) ‘A framework for stakeholder management and corporate culture’, *Built Environment Project and Asset Management*, 3(1), pp. 24-41.

Meier, C. (2008) ‘Causal Inferences on the Cost Overruns and Schedule Delays of Large-Scale US Federal Defense and Intelligence Acquisition Program’. A *Paper submitted to National Reconnaissance Office,* Chantilly, VA, USA, pp. 1-3.

Menoka, B. (2014) Stakeholder Engagement and Sustainability-Related Project Performance in Construction, A PhD Thesis Submitted to Liverpool John Moores University.

Meyers, R.G. (1989) ‘The Roots of Pragmatism: Madden on James and Peirce’, *Transactions of the Charles Peirce Society,* 25(2), pp. 85-121.

Meyerson, D. (2001) ‘Tempered Radicals: How people use difference to inspire change at work’, Boston, MA: *Harvard Business School Press*.

Miles, M.B. and Huberman, A.M. (1994) *Qualitative Data Analysis: An expanded sourcebook*, 2nd ed. Sage Publications Inc, Thousand Oaks, California.

Mitchell, R., Agle, B., and Wood, J. (2017) 'Toward a Theory of Stakeholder Identification and Salience: Defining the Principle of Who and What Really Counts', *The Academy of Management Review*, 22(4), pp. 853-866.

Mitchell, R.J., Mitchell, R., Hunt, R., and Townsend, D. (2020) Stakeholder Engagement, Knowledge Problems and Ethical Challenges, *Journal of Business Ethics*, pp. 2-4.

Mold, J. and Hamm, R. (2010) 'The law of diminishing returns in clinical medicine: How much risk reduction is enough', *Journal of the American Board of Family Medicine*, 23(3), pp. 371-375.

Morgan, G. (1983) *Beyond method: Strategies for social research*, Sage Publications, Beverly Hills.

Morgan, D. (2014) 'Pragmatism as a Paradigm for Social Research', *Qualitative Inquiry*, 20(8), pp. 1045–1053.

Morikawa, M. and Morisson, J. (2004) 'Who develops ISO standards? A survey of participation in ISO's international standards development process', Pacific Institute for Studies in Development, Environment and Security.

Morrell, K. (2008) 'Narratives of Evidence Based Management: A Polemic', *Journal of Management Studies*, 45(3), pp. 613-635.

Morley, C. (2007) 'Engaging practitioners in critical reflection: Issues and Dilemmas', *Journal of Reflective Practice*, 8(1), pp. 61-74.

Nelson, R.R. (2005) Project retrospectives: Evaluating project success, failure and everything in between, MIS Quarterly Executive, 4(3), pp. 361-372.

Nepal, M., Park, M., and Son, B. (2006) 'Effects of schedule pressure on construction performance', *Journal of Construction Engineering and Management*,132(2), pp. 182-188.

Nini X., Patrick, W., Mark A., Xueqing, W., and Rui Z. (2018) 'Towards integrating construction risk management and stakeholder management: A systematic literature review and future research agendas', *International Journal of Project Management*, 36, pp. 701–715.

Ng, S., Skitmore, M., Tam, K., and Li, T.H. (2014) Public engagement in major projects: The Hongkong Experience, *Institute of Civil Engineering*, 167(1), pp. 22-31.

Nguyen, T.H.D. and Wood, A. (2020) Stakeholder influence strategies in construction projects, *International Journal of Managing Projects in Business*, 13(1), pp. 47-66

Nugent, G. and Hollingsworth, S. (2012) A Practical Guide to Action Research for Literary Educators.

Nwachukwu, C. C. and Emoh, F. I. (2011) 'Building Construction Project Management Success as a Critical Issue in Real Estate Development and Investment', *American Journal of Social and Management Sciences*, 2(1), pp. 56–75.

Olawale, Y. A. and Sun, M. (2010) 'Cost and time control of construction projects: Inhibiting factors and mitigating measures in practice', *Construction Manage Economics*, 28(5), pp. 509–526.

Olander, S. and Landin, A. (2005) 'Evaluation of stakeholder influence in the implementation of construction projects', *International Journal of Project Management*, 23(4), pp. 321–328.

Olander, S. (2007) 'Stakeholder impact analysis in construction project management', *Construction Management and Economics*, 25(3), pp. 277-287.

Olateju, O. I., Abdul-Azeez, I. A., and Alamutu, S. A. (2011) 'Project Management Practice in Nigerian Public Sector – An Empirical Study', *Australian Journal of Business and Management*, 1(8), pp. 1-7.

Onwuegbuzie, A. and Leech, N. (2005) 'On becoming a pragmatic researcher: The importance of combining quantitative and qualitative research methodologies', *International Journal of Social Research Methodology*, 8(5), pp. 375-387.

Oppong, G.D., Chan, A.P., and Dansoh, A. (2017) 'A review of stakeholder management performance attributes in construction projects', *International Journal of Project Management*, 35 (6), pp. 1037-1051.

Patton, M. Q. (2003) Qualitative evaluation and research methods, 3rd ed. Thousand Oaks, CA: Sage.

Payne, S.L. and Calton, J.M. (2002) Towards a managerial practice of stakeholder engagement: developing multi-stakeholder learning dialogues, Greenleaf Publishing Limited, Sheffield.

Pedler, M. (2008) *Action Learning for Managers*, 2nd Edition, Aldershot England: Gower Publishing Limited.

Peirce, C. S. (1960) *Collected papers*, 2nd ed. Cambridge, MA: Harvard University Press.

Phillips, R. (2003) Stakeholder theory and organizational ethics, San Francisco, CA: Berrett-Koehler Publishers.

PMI, (2013) 'A guide to the Project Management Body of Knowledge (PMBOK® Guide)-fifth edition', *Project Management Journal*, fifth ed. Newtown Square, Pennsylvania.

PMI, (2016) The pulse of the profession: 8th global project management survey. Retrieved from http://www.pmi.org/learning/thought-leadership/pulse/pulse-of-the-profession.

Raelin, J.A. (2003) *Creating leaderful organizations: How to bring out Leadership in everyone*, San Francisco: Berrett-Koehler.

Raelin, J. and Coghlan, D. (2006) 'Developing managers as learners and researchers: Using action learning and action research', *Journal of Hammond*, Michael, and Jerry Wellington, *Research Methods: The Key Concepts*, Routledge, pp. 2012.

Raelin, J.A. (2010) *The leaderful field book: strategies and activities for developing leadership in everyone.* London: Nicholas Brealey.

Raes, A.M.L., Heijltjes, M.G., Glunk, U., and Doe, R.A. (2011) 'The interface of the top management team and middle managers: a process model', *Academy of Management Review*, 36(1), pp. 102-126.

Rajegopal, S. (2013) Portfolio Management: *How to innovate and invest in successful projects*, England: Macmillan Publishers Limited.

Ramsey, C. (2014) 'Management learning: A scholarship of practice centred on attention', *Journal of management learning*, 45(1), pp. 6-20.

Richards, L. (2005) Handling Qualitative Data: A Practical Guide. London: Sage Publications.

Rondinelli, D.A. and London, T. (2002) Stakeholder and corporate responsibilities in cross-sectoral environmental collaborations: building value, legitimacy and trust, Greenleaf Publishing Limited, Sheffield.

Rorty, R. (1982) *Consequences of Pragmatism*, Minneapolis: University of Minnesota Press.

Ryan, G.W. and Bernard, H.R. (2003) 'Techniques to identify themes', *Field methods*, *15*(1), pp. 85-109.

Saunders, M. (2019) Research method for business students, understanding research philosophy and approaches to theory development, Pearson Education Ltd, 8th ed. United Kingdom.

Saunders, et al. (2017) 'Saturation in qualitative research: exploring its conceptualization and operationalization', *Open Access Journal*, 52(4), pp. 1893-1907.

Sambasivan, M. and Soon, Y. W. (2007) 'Causes and effects of delays in Malaysian construction industry'. *International Journal Project Management*, 25(5) pp. 517–526.

Schneper, W. D. and Guillen, M. (2004) 'Stakeholder rights and corporate governance: A cross-national study of hostile takeovers', *Administrative Science Quarterly*, 49, pp. 263-295.

Shrivastava, P. (1987) 'Rigor and practical usefulness of research in strategic management', *Strategic Management Journal,* 8(1), pp. 77-92.

Siew, J., Balatbat, M., and Carmichael, D. (2013) 'The relationship between sustainability practices and financial performance of construction companies', *Smart and Sustainable Built Environment*, 2 (1), pp. 6-27.

Sillanpaa, M. (1998) 'The Body Shop values report: Towards integrated stakeholder auditing', *Journal of Business Ethics,* 17(13), pp. 1443–1456.

Silvius, A.G. and Graaf, M.D. (2018) 'Exploring the project manager's intention to address sustainability in the project board', *Journal of Cleaner Production,* 208, pp. 226-1240.

Stewart, C., Katherine, K., Christopher B., and Shankar, S. (2018) 'Practices, projects and portfolios: Current research trends and new directions', *International Journal of Project Management* 36 (5), pp. 762-772.

Stout, L. (2012) *The shareholder value myth*, San Francisco, CA: Berrett-Koehler Publishers.

Susman, G. (1983) *Action Research: A Socio-Technical Systems Perspective*, Newbury Park: Sage.

Taylor, A., Oger, C., and Morris, J. (2019) 'Five Step Approach to Stakeholder Engagement', BSR Report, *Sustainability Management,* New York, USA.

Tenkasi, R. and Hay, G. (2004) 'Actionable Knowledge and Scholar-Practitioners: A Process Model of Theory-Practice Linkages', *Systemic Practice and Action Research*, 17(3), pp. 177-206.

Thomas, H. R. and Ellis, R. (2007) 'Contractor prebid planning principles', *Journal of Construction Engineering Management*, 133(542), pp. 542-552.

Thorne, S. (2000) 'Data analysis in qualitative research', *Evidence Based Nursing*, 3, pp. 68-70.

Tobin, G. A. and Begley, C. (2004) 'Methodological rigour within a qualitative framework', *Journal of Advanced Nursing*, 48, pp. 388-396.

Townsend, D. M., Hunt, R. A., McMullen, J. S., and Sarasvathy, S. D. (2018) 'Uncertainty, knowledge problems and entrepreneurial action', *Academy of Management Annuals*, 12(2), pp. 659–687.

Tracy, S. (2010) 'Qualitative quality: Eight "big-tent" criteria for excellent qualitative research, *Qualitative Inquiry'*, 16, pp. 837-851.

Turner, J. R. (1993) Handbook of Project-Based Work, London: McGraw-Hill.

Ulrich, W. and Reynolds, M. (2010) 'Critical systems heuristics', In Systems approaches to managing change: A practical guide, edited by Martin Reynolds and Sue Holwell, London: Springer, pp. 243-292.

Vince, (1996) Experiential Management Education as the Practice of Change in R. French and C. Grey: Rethinking Management Education, London, Sage.

Vos, J. and Achterkamp, M. (2006) 'Stakeholder identification in innovation projects: going beyond classification', *European Journal on Innovation Management* 9(2), pp. 161-178.

Walsh, C. and Kaushik V. (2019) 'Pragmatism as a Research Paradigm and its Implications for Social Work Research', 8(9), pp. 1-17.

Warner, M. (2019) Stakeholder management processes and methods, project management blueprint. Retrieved from http://www.TheProjectManagementBluePrint.com

Weick, K.E. (2002) ‘Real time reflexivity: prods to reflection’, *Organization Studies*, 23(6), pp. 893-898.

Worsley, L. (2016) Stakeholder led project management, Changing the way we manage projects, Business Experts Press.

Worsley, L. (2013) ‘Requiem for the Project Manager’, What does project management mean to me- a project manager’s sermon, conceived by Shim Maron, compiled by Allen Ruddock.

Young, T. (2006) *Successful Project Management*, Kogan Page Publishers, London.

Zafar, F., Igbal, Z., Wajid, I., Abbasi, N. (2014) ‘Project failure case studies and suggestion’, *International Journal of Computer Applications*, 86(6), pp. 2-7.

APPENDICES

UNIVERSITY OF LIVERPOOL

Committee on Research Ethics

PARTICIPANT CONSENT FORM

Title of Research Project:	**Improving project performance on construction projects through stakeholder management-An Action Research Inquiry**

Researcher(s):

Please initial box

1. I confirm that I have read and have understood the information sheet dated May 1, 2019 for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily. ☐

2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason, without my rights being affected. In addition, should I not wish to answer any particular question or questions, I am free to decline. ☐

3. I understand that my responses will be kept strictly confidential and anonymity will be maintained. I give permission for members of the research team to have access to my anonymised responses. I understand that my name will not be linked with the research materials, and I will not be identified or identifiable in the report or reports that result from the research. ☐

4. I agree to take part in the above study. ☐

Participant Name	Date	Signature
_____	_____	_____
Researcher	Date	Signature
_____	_____	_____