An evaluation of critical core competencies required for effective project leadership in construction.

By

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DECLARATION

I, **LESLEY THEMBELANI LAPHI**, declare that the contents of this thesis represent my own unaided work, and that the thesis has not previously been submitted for academic examination towards any qualification. Furthermore, it represents my own conclusions and not necessarily those of the Cape Peninsula University of Technology.

Signed **Date**

ABSTRACT

The definition of a project broadens the scope and areas in which project management can be learnt and understood. This research was however, deliberately restricted to construction project management because the author believes that whilst project management is studied as a generic discipline, the demands of a specialized industry are determined by certain implicit cultural norms, which are determined by the industry's culture. The construction industry is generally masculine with heavy duties and pressure for time and with specific architectural plans that should be adhered to in order to meet the requirements of the regulations, and satisfy the customer. Though these construction sites may differ in size and level of mechanization, the standards and expectations are universal, and are governed by local government statutes, policies and regulations. Research has identified mixed feelings about the importance of hard skills as compared to soft skills as must-haves for effective project leadership. Of particular interest were the implied findings that relate to ideal leadership styles for the industry when measured against the expectations of time, cost and quality of the product. The people who were interviewed were project managers, engineers, technicians and general labourers at the plant site. The questions were specifically compiled for project practitioners who are affected by day- to- day challenges that are encountered during project execution.

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DEDICATION

This thesis is dedicated to my mother, Nomhle Victoria Laphi uMamaya, uMagwa, uZondwa omhle for being a mother and a father to me. This is for you mom even though it will benefit me more.

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GLOSSARY

Abbreviations	Explanation
WBS	Work Breakdown Structure
CPM	CRITICAL Path Method
PERT	Program Evaluation and Review Technique
PMBOK	Project Management Book of Knowledge

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Chapter 1 – Background to the study

1.1 INTRODUCTION

Most studies, which relate to project management concentrate on success and failure factors of projects to the exclusion of the project manager or leader's role in the execution of projects (Neuhauser, 2007:21). The project manager's leadership role is constantly downplayed and in certain instances totally ignored as a critical success factor in project execution and project management (Turner & Muller, 2005:49). Studies on the effect of management and/or leadership in organisational performance and success emphasize the indispensability of management, or leadership in organizations. The history of management has pronounced on many theories, which are complimentary to each other, and are not exclusive and not a one-size-fits-all situation. These studies too often perceived management and leadership as the same thing, but merely named differently, whereas in today's study these two, though related, and sometimes complimentary, are distinctly different from each other. Too often leadership is confused with management, specifically so with project leadership, which is distinctly different from project management (Young & Dulewics, 2008:18). The concept of leadership as a discrete process is undoubtedly attractive to many people, including those who might think that they have the required characteristics.

1.2 BACKGROUND

A project manager's role is more challenging than that of a typical functional manager; the project manager has to work across departments, which largely operate independently of each other. Embedded projects in organisations are traditionally designed to support functional managers—the project manager has other challenges such as providing leadership without documented support formal authority, and working in matrix organizations where unity of command is an issue (Anantatmula, 2010:14). Leadership involves setting the direction for the organisation, aligning people towards the organisational objectives, motivating the people, and effectively influencing the people's behavior (Burke and Barron, 2007:106). Conversely, management involves planning, controlling, organising, and leading the organisation towards the set objectives (Rao, 2010:4). Whilst these two can easily be confused with each other, there are managers who distinctly are not leaders, and leaders who have little management skills. It is appropriate, therefore, to define these correctly, and the differences do not apply only

to leadership and management, in general terms, but specifically as they relate to general management and other management disciplines versus project management.

The study seeks to identify critical competencies, which are required by a project leader given the inherent limitations of the project leader as derived from the project structure, which is in contrast to the traditional management structure (Skulmonski & Hartman, 2009:). The traditional management structure enables the manager with authority, which he may use to direct employees towards the organisational goals (Young & Dulewics, 2008 :). Project managers have to work without that authority because of the matrix structure, which creates an authority for their proper functioning (Jowah, 2012:1097 - 1106). Leadership therefore becomes an imperative *modus operandi* if both the project and project management have to be successful. While management is associated with control and organisation, leadership requires abilities which both cope with challenges and motivate people (Kotter 2009) to voluntarily work towards the achievement of the organisational goals. The two may be understood better by way of definition.

Anantatmula (2010:14) posits that the distinction between management and leadership is not always obvious, because of the apparent overlap in responsibilities. The word leadership often carries with it explicit concepts such as vision, confidence, management skills and charisma. Due to it being appealing as a proposition it can provide motivation for development, which may not otherwise be present in an organization or in an individual (Mumford, Gold, 2004: 9). By definition, leadership is the ability to establish vision and direction and to influence and align others towards a common purpose, and to empower and inspire people to achieve success (Burke and Barron, 2007:28). Another definition by Jones and George (2009:497) states that leadership is a process by which an individual exerts influence over other people and inspires, motivates, and directs their activities to help to achieve group or organizational goals. Management is the planning, organising, leading, and controlling of human and other resources to achieve organisational goals efficiently and effectively (Smit *etl.* 2007:9). These authors concur and submit that besides the basic planning, organising, leading and controlling, management involves that with predetermined and stated organisational goals should be achieved as productively as possible. The position of

manager implies immediately formal authority, which is bestowed on the person concerned and can, therefore, be used to direct resources. From the preceding definitions it is clear that it is possible to have a manager who leads, and a leader who manages. The differences between these two closely linked nouns are illustrated in Table 1.1 below.

Table 1.1: Key aspects of leadership and management

Leadership	**Management**
Setting a direction	Planning and budgeting
Aligning people	Organization and staffing
Motivating	Controlling and problem solving
Mastery of the context	Control of the environment

Source: Young and Dulewics (2008: p18)

From Table 1.1 above, it is evident that leadership focuses on people, whereas management focuses on tasks that should be performed rather. Anantatmula (2010:14) emphasizes this by stating that management is concerned with making decisions about processes and functions in order to improve operational efficiency and effectiveness, while leadership is about motivating and guiding people to realize their potential and achieve tougher and more challenging organizational goals. Leaders have followers, but managers have subordinates; and leaders use power to influence, but managers use authority to get things done. Because most projects exist in matrix structures with authority gaps, as alluded to above, management becomes difficult without authority; it is, therefore, leadership that is required to enable the project manager to execute the project processes successfully. Leadership therefore, and not management, is of critical importance in project leadership, which is commonly referred to as project management.

1.2.1 The project manager's position in the organisation

There are different structures in an organisation, and the typical project structure in an organisation is the matrix structure. The matrix structure has complications, as the

project manager does not have direct authority over his subordinates and team mates. The presence of the authority gap weakens the authority of the project manager and pushes project managers to resort to other means of leadership outside of formal authority, which they do not have, or if they do, it is limited and restricted. The study seeks to identify critical competencies, which are required by a project leader given the inherent limitations of the project leader, as derived from the project structure ((Skulmonski & Hartman, 2009:63). The traditional management structure enables the manager with authority over the department that the manager is responsible for. The manager in the traditional organisation has authority to hire, fire, promote and instruct, and the manager holds a formal position with a clearly defined hierarchy and with one reporting structure (Young & Dulewics, 2008:18). The project structure denies the project manager authority to directly recruit, fire, remunerate or promote, let alone instruct employees on what should be done.

Authority is the power that is bestowed upon an individual person to hold people accountable for their actions, and to make decisions on any issues, which relate to the manager's responsibility (Jones & George, 2009:49). Given authority, managers can direct, and control the subordinate's behaviour towards the achievement of the organisational goals (Curtis & Manning, 2009:139). If positions are arranged hierarchically, authority can, therefore, be exercised effectively with a clear line of command (Ferreira, Erasmus & Groenewald, 2011:339), and a well-defined span of control. The authority of the manager is derived from the position that he / she occupies in the hierarchical organisational structure.

Unlike traditional management structures with clearly defined report structures, embedded projects are based on the matrix system (Gray & Larson, 2008:65) in which the project manager has no direct authority over the subordinates, as they are seconded to him from functional departments (Jones & George, 2009:358). The extent of the power of the project manager is dependent largely on the size, structure and politics of the organisation (Rao, 2009:467). The project structure is inherently temporary as per the definition "a temporary undertaking limited by time, cost, quality and scope" despite the advantages of the use of the matrix structure from an

organisational perspective (most ideal project structure), namely communication efficiency, project flexibility, knowledge sharing, and maximisation of resource usage (McShane & von Glinow, 2009:266). The matrix system has several operational problems that impact directly on the project manager's leadership and performance, which are dual reporting system, divided loyalty, and increase on goal conflict and ambiguity (Sy & D'Annunzio, 2005:39-48). Critical in this study is the matrix structure's consequent disempowerment of the project manager by creating an authority gap. Because the project is temporary in nature, the subordinates are seconded for the duration of the undertaking (Brown & Hyer, 2010: 34), which further weakens the position and function of the project manager in the matrix. The authority gap (disempowerment) creates a dilemma for the project manager who will have to lead the project without use of traditional managerial authority (Goold & Campbell, 2003:427-439), and yet is expected to come up with a successful project.

The manager has a job and responsibilities to perform, and it becomes expedient that the manager should resort to other forms of power and techniques to effect successful project execution and overcome the authority gap. According to Yukl and Fable (1991:132-140), the manager in such circumstances may use any one of the following or a combination thereof; consultation, rational persuasion, inspirational appeals, ingratiating tactics, coalition tactics, pressure tactics, upward appeals or exchange tactics. By their nature, projects are high risk undertakings with high failure rates, hence this study focuses on identifying critical competencies for effective project management under these circumstances, with a focus on construction sites.

Leadership, therefore, becomes an indispensible option to manage the project by influencing and not instructing people. While management is associated with control and organisation, leadership requires abilities to both cope with challenges and to motivate people. If leadership is the ability to influence people, it means that leadership works outside of the authority that is bestowed on an individual in the organisation. It is competencies, which, relate to effective leadership that the study sets out to seek.

1.2.2 Leadership's influence that is exerted on others

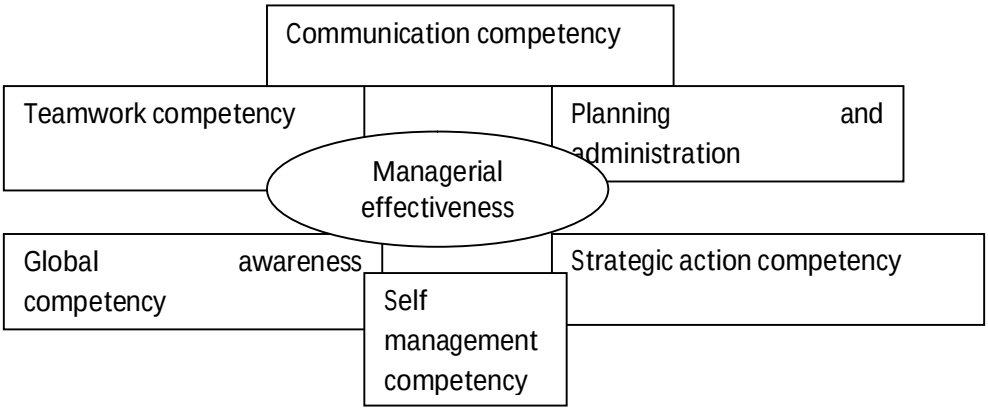
For any effective leadership to take place, there should be power, or factors that will enable other people to want to be influenced. House *et al. (2004)* claim that motivation is a key component of leadership and leadership is, amongst others, the ability to motivate others to contribute towards the effectiveness and success of the groups of which they are members**.** Kerzner (2006) observes that projects fail to meet time and cost targets owing to poor morale, lack of motivation, poor human relations, poor productivity, and a lack of commitment from employees. Young (2003: 65) emphasizes that leadership is using necessary skills to energize and direct a diverse group of people to give high performance, willingly and enthusiastically, throughout the life cycle of a project. Leadership is, therefore, a skill of influencing the behaviour of people to achieve results; this is of utmost importance when requirements for projects must be met. Leadership can also be regarded as a complex process by which a person influences others to accomplish a mission, task, or objective, and directs the organization in a way that makes it more cohesive and clear. A leader carries out this process by applying certain attributes such as beliefs, values, various skills, knowledge and ethics (van Eeden *et al.* 2008, 264), which are all enshrouded in power; and the ability to influence. Whereas success is defined as the work that is carried out to the desired quality; within the allowed time and within the allowed budget (Al-Jibouri, 2003: 145).

1.2.3 Leadership competencies

Competencies include knowledge, skills, behaviours, and attitudes that a person should have to be able to perform a particular activity (Hellriegel *et al.* 2005:5). Competencies should be relevant to tasks that should be performed, which means, therefore, that a manager may need different competencies from those that are required by an engineer in the same organisation. This combination of skills, knowledge, behaviour or attitude should assist towards personal effectiveness in the execution of a person's duties and responsibilities. Lewis (2003: 20) classified competences into two: primary and secondary competencies. Primary competencies refer to relationship skills, which include, among others, negotiation skills, personal skills, and dealing with conflicts,

which are commonly referred to as soft skills. Secondary skills relate to technical knowhow such as, qualifications in a particular field of study, be they technical or academic. Mumford and Gold (2004: 54-55) suggest a split in management competencies, and they classify the two approaches as behaviour and standard approaches to competencies. Hellriegel *et al* (2005:5) suggest a model of competencies which, has six elements that comprise a complete managerial model of competency expectations. Figure 1.1 below illustrates the classification.

Figure 1.1. A Model of Managerial Competencies



Hellriegel, *et al.,* 2005:5

Figure 1 above illustrates the six different elements of managerial competencies as they relate to managerial effectiveness. Leadership is critical to provide the much needed direction and interpretation of the vision and mission of the organisation, as evidenced by many new managing directors of sinking organisations who turn around the businesses and make them profitable again. Taylor and Stoller (2008:748) state that leadership competencies are, therefore, seen as a critical component to achieve organisational turnarounds and success, hence, these competencies must receive much attention. Jugven and Muller, as cited by Anantatmula (2010:13), acknowledge that the definition of project success is transitioned over a period of time from a narrow focus of completing a project within time, cost and scope to expanding the focus by including the stakeholder requirements. Project leadership effectiveness, therefore, goes beyond both the iron triangle and the square root of project success.

Competencies speak to the soft skills, which are the human elements of project management and relate to working relationships that enable the followers to work willingly to achieve the organisational goals, hence it is people and not expertise that gets work done. The study, therefore, seeks to focus on these aspects of human relations, which allow for and promote cooperation towards completion of projects.

1.3 PROBLEM STATEMENT

As many organisations move towards management-by-projects, coupled with a high project-failure-rate, it is important to understand the critical success factors of a project. The history of the development of project management is littered with development of tools and techniques, which were meant to assist with project execution. Whilst the tools and techniques and technology enabled the people to work smarter and faster, it did not have a significant reduction on the failure rate of projects. Studies in general management and in politics have shown clearly the importance of leadership and management in the execution of any duties and tasks. The uniqueness of projects and, by derivation project management, as evidenced by the presence of the authority resulting in dual loyalty and the disempowerment of the project leader, necessitates a proper study. Specific leadership qualities and leader core competencies are required for effective project management.

This study investigates human-related competencies (primary competencies) that are required for effective project management. The philosophy behind this is that projects are executed by people through people, and there should be an understanding of what personality qualities or competencies are required for the purpose.

1.4 RESEARCH OBJECTIVES

This study seeks to achieve the following:

1.4.1 Identify competencies that are generally used by project leaders in the industry, specifically construction industry

1.4.2 Identify the critical indispensable competencies that the project manager should use at a construction site to reduce project failure

1.5 RESEARCH DESIGN AND METHODOLOGY

1.5.1 Literature review

To establish the theoretical background for this study, the researcher gathered information and data from journals and books, and interacted with professionals in the construction industry. A lot of theory was discussed, read and brainstormed, and most of that informs the structure and investigation in of study.

1.5.2 Target population

The target population for this research comprised project practitioners who interact directly and regularly with the project managers. These practitioners at different levels should be able to share what they perceive to be proper characteristics of effective project leadership, which enables them to work hard to achieve organizational objectives. It is assumed that subordinates know how well they want to be treated, and will, therefore, evaluate their manager's role in their performance in the organisation. The research was conducted in the Gauteng province amongst construction companies within the province.

1.5.3 Sampling selection and method of sampling

The stratified random sampling technique was used amongst respondents from different construction companies in Gauteng. Because of the serious imbalance in racial and gender distribution, it was necessary to stratify the population and avoid skewing the results towards one group of people.

1.5.4 Sample size

In view of the nature of the industry and accessibility, together with the level and requirements of the qualification, the sample was arbitrarily placed at a minimum of 100 respondents. The more questionnaires are administered, the higher the probability of more accurate responses and answers to the research questions.

1.5.5 Method of data collection

The method of personal interviews was used to obtain information by making use of a structured questionnaire. The main reason for the selection of this method is that if there is any ambiguity it would be cleared immediately, as the author was at hand. The questionnaire was divided into subsections, namely demographics and soft skills (primary competencies).

1.5.6 Data analysis

The SPSS (Software Program for Social Sciences) was used for analysis because of its effectiveness and user-friendly qualities. The data was converted into graphs and tables for easy reading and comparisons, where necessary. The analysed data and the results were reported accordingly for the thesis document, which was written following the relevant research process.

1.5.7 Assumptions made

1.5.7.1 The respondents will not be biased and will be honest to the best of their understanding.

1.5.7.2 All the questions that were asked would not offend anyone, would be well understood, and will be answered by the respondents.

1.5.7.3 There will be no restrictions at any of the construction plants in Gauteng from where information and data would be collected.

1.5.7.4 This study will assist both the author's workplace and to all project practitioners, in general.

1.5.8 Scope and limitation of the study

1.5.8.1 The research was limited geographically for economic reasons, while there were also time limits within which the report had to be submitted.

1.5.8.2 The research was restricted to approximately 100 people, and this may not be representative of the entire country.

1.6 ETHICAL CONSIDERATION

Ethics in research is the application of ethical principles to different types of studies in the process of administering scientific studies. This includes academic scandal and misconduct by researchers, which may be in the form of fraud, asking ethically improper questions, deliberately reporting incorrect information, plagiarism, dishonesty, subjectivity, researching without obtaining express permission, misuse of information discovered in the research, moral responsibility towards the participants, and confidentiality of the participants. Research informants who participated in the survey were informed that their anonymity will be assured and negotiated reflexively, and through dialogue with them to allow for understanding of the importance of research ethics.

1.7 CHAPTER CLASSIFICATIONS

Chapter One: the proposal and guide to the study of the thesis.

Chapter Two: the authority gap and how it impacts on project execution, in general, and specifically in construction projects.

Chapter Three: hard skills and the development of the tools and techniques of project management to date.

Chapter Four: soft skills and their role in effective management, the theory around them and their application in the industry at present.

Chapter Five: research design and methodology: this chapter considers the data that was collected, its analysis and interpretation.

Chapter Six: the findings or results from the survey, explanation, interpretation, recommendations, and conclusion of the research study.

1.8 SUMMARY

The study of leadership has been an ongoing activity for years on end, and is not about to end. As cultures change, technology sets in, the world becomes one global village, hence there will always be changes in the circumstances, and behaviour of people . Leadership is a function of followership, culture, legislation, and the economic environment around us. The results that may be found here may differ from those from other regions of South Africa (given the cultural context), but the findings should assist with getting closer to understanding how leaders should lead within construction sights.

CHAPTER 2: Authority gap and prominent traditional leadership styles used in project execution: a literature review

2.1 Introduction

According to Jones and George (2009:49), authority is power that is bestowed upon an individual person to hold people accountable for their actions, and to make decisions on any issues, which relate to the manager's responsibility. Project managers in embedded projects find themselves with limited power or no authority at all over their subordinates. The structure itself creates an environment that is not conducive to free practice of authority by the project leader. Curtis and Manning (2009:139) assert that if project leaders were given the authority, they would be able to directly control the subordinate's behaviour towards the achievement of the organisational goals. Formal authority translates the manager's position into legitimate power, which allows the hierarchical responsibility of controlling subordinates. In project structures, the project leader does not have that direct power to influence subordinates behaviour (Jones & George, 2009:358). The subordinates are seconded to him from other departments for the period or duration of the project. Some of the team members may also be at the same level as the project leader or sometimes above the leader in the organisational structure,which further erodes whatever power the project leader may need to execute duties.

In these embedded projects, project managers are appointed to co-ordinate the processes and activities by using existing resources that are controlled by functional managers (Gooled & Campbell, 2003). Consequently, they are not involved in the hiring or firing of the subordinates that they work with, they have no control over promotions or demotions, nor can they punish bad behaviour by a subordinate. The expectations for successful project execution remain high from senior management regardless of the absence of direct authority on the resources. The matrix structure creates disempowering authority gaps which creates a leadership dilemma for project managers as a result, according to Sy and D'Annunzio (2005: 44). This introduces a new phenomenon such as a dual reporting system, divided loyalty, increased goal conflict, and ambiguity of subordinates' expectations.

According to Manning and Curtis (2009:46), the hierarchical structure creates in the mind of the subordinates the positioning of formal authority, which can then transfer to legitimate power which gives the manager authority to direct and control the subordinates' behaviour towards the achievement of organizational goals. Ferreira, Erasmus and Groenewald (2009:4) assert that in traditional structures, where positions are arranged hierarchically, the authority can be exercised effectively with a clear line of command. The extent of the power of project managers is largely dependent on the size, structure and politics of the organization concerned (Jowah, 2012: 1097 - 1106). The matrix structure creates problems that impact on the successful delivery of projects by project managers by creating an authority gap, which leads to divided loyalty amongst subordinates. Hierarchical authority presents power for the manager, which he/she uses to executive duties of controlling, budgeting, organising, and leading the organisation. Unlike traditional management structures with clearly defined reporting structures, projects are based on the matrix system (Gray & Larson, 2008:65), where project managers have no direct authority over subordinates as they are seconded to him/her from functional departments (Jones & George, 2009:358). The extent of the power of the project manager is largely dependent on the size, structure and politics of the organisation (Rao, 2009:467).

2.2 Matrix organisation vs. project organisation

The project based approach enables one to be responsive to clients by changing expectations, and is more efficient than traditional management practices (Lindkvist, 2007:13-20). This is the benefit that organisations that are projectifying are looking for, thereby creating small sections of operations that are dependent on resources from different departments within the large corporation. Thiry and Deguire (2007:649-658) posit that project based organizations have received increasing attention in recent years as an emerging organizational form. The project structure is inherently temporary as per the definition of a project, namely "a temporary undertaking limited by time, cost, quality and scope." Despite the advantages of the use of the matrix structure from an

organisational perspective (most ideal project structure), namely communication efficiency, project flexibility, knowledge sharing, and maximisation of resource usage (Mc Shane & von Glinow, 2009:266). Because the project is temporary in nature, the organisation utilises resources from different parts of the organisation, and gives these to the project manager. One element of resources that is mobilised for the project is human resources, which is seconded to the project for the duration of the undertaking; the project manager does not have direct authority over these resources (Brown & Hyer, 2010: 34) and over team members who continue to be loyal to their respective functional departments from which they are seconded. It is clear to them that once the project is over, they have to return to their functional units, and hence they show impeccable loyalty to the department to which they belong.

The matrix system may be the best invention since management efficiency was sort (Gary and Larson, 2008: 68), but the system has several operational problems that impact directly on the project manager's leadership and performance. These negative impacts include a dual reporting system by the people who are seconded to the project, which leads to divided loyalty and inevitably leads to an increase in goal conflict and ambiguity (Sy & D'Annunzio, 2005:39-48). There is a clear distinction between a project organisation and a matrix organisation as is defined by the nature of the organisation and the operations thereof. Table 1 below illustrates the differences between the two structures, as they were identified by Larson and Gary (2011: 77).

Table 2.1: Project organization vs. matrix organizational structure

Project organisation	**Matrix organisation**
• Purely temporary	• Relatively permanent
• Project managers' authority ranges from very low to very high	• Project managers' authority distributed reasonably
• Low information processing	• High information processing
• Power struggles avoided in case of project having a limited life	• Power struggle; a distinct possibility between functional managers and project

	managers
• Project managers takes charge of information, resources and people	• Project heads have to share resources with functional heads

Source: Author's construction

Jowah (2012: 1098 - 1106) posits that the matrix structure is simply an extension of the project management organisation, generally applying to large establishments and sites advantages, which allow employees to see the bigger picture and creates super functional teams and cultures; however, its disadvantages are that it increases goal conflicts, creates dual reporting and causes dual loyalty. Kodama (2007:3) defines a project based organization as a variety of organizational forms that involve the creation of temporary systems for the performance of a project task. These different forms become detached from the traditional management structures, as there is no direct authority by the project leader to operatives and team mates. De Fillippi and Arthur, as cited by Thiry and Deguire, (2007:649-658) define it as organizations that manage production functions within a temporary project organization setting. These project organizational structures within a large organisation are, therefore, as a system that divides and co-ordinates personnel and other resources. The structures should indicate hierarchy and the authority command stream (Jones, George and Hill, 2000:271). The presence of structures should accelerate the workflow process, communication and authority and responsibilities with accountabilities, but the temporary nature of the embedded project removes the authority and creates a gap (Mc Shane and Travaglione, 2003:502), gap of which necessitates different leadership behaviour and competencies to be able to effectively execute projects in such a complex and disempowering management position.

This hybrid organizational form, if well implemented, will maximise the use of resources and improve on the efficiency, but that is the ideal. The reality is that it involves people who have their attitudes, beliefs, dislikes and too often a siloed in their own professional

ethics and conduct to the exclusion of the other people within the operation. Because of the split loyalty and undefined ownership of the resources, the authority gap creates a dilemma for the project manager who will have to lead the project without use of the traditional managerial authority (Goold & Campbell, 2003:427-439), and is still expected to deliver a project within time, cost and quality, as per the project scope. Organizations invest in project managers and expect them to deliver projects and yet do not give full authority of resources to project managers.

A distinction should be made between a functional manager and a project manager because the two have different traits. Obviously, a project manager's role is more challenging than that of a typical, functional manager; in addition to working across functional and organizational environments, which are traditionally designed to support functional managers. The project manager has other challenges such as providing leadership without documented formal authority, and working in matrix organizations where unity of command is an issue (Anantatmula, 2010:14). One of the biggest traits that a project manager should possess, therefore, is leadership as opposed to management. Leadership plays a critical function in the performance of the project team. Marchewka (2006:318) postulates that leaders that have mastered the authoritative, democratic, affiliative, and coaching styles tend to create the best climate and have the highest performance.

2.3 Project managers (leaders) vs. functional managers

Many studies, which relate to project management concentrate on the success and failure factors of projects, too many times to the exclusion of leadership and its role in the execution (Neuhauser, 2007:21). The project manager's role is constantly underplayed and little reference is made to the importance of a project leader in literature that cover project management, almost excluding the project leader as a success factor in project execution. There is a need to consider the traits that may be necessary in a project leader as an important variable in the process of delivering a successful project (Turner & Muller, 2005, 49). The concepts of leadership as a discrete

process is undoubtedly attractive to many people, not least those who might think that they have the required characteristics. Leadership should be identified as closely related, but not identical to management though these are erroneously interchanged as if they are synonyms.

Too often leadership is confused with management, specifically so with project leadership, which is distinctly different from project management (Young & Dulewics, 2008, 18). Obviously, a project manager's role is more challenging than that of a typical functional manager; in addition to working across functional and organizational environments, which are traditionally designed to support functional managers, the project manager has other challenges such as providing leadership without documented support, formal authority, and working in matrix organizations where unity of command is an issue (Anantatmula, 2010: 14). The differences between leadership and management are clearly stated in the table below.

Table 2.2: Key aspects of leadership and management

Leadership	**Management**
• Setting a direction	• Planning and budgeting
• Aligning people	• Organization and staffing
• Motivating	• Controlling and problem solving
• Mastery of the context	• Control of the environment

Source: Young and Dulewics (2008: 18)

As indicated in Table 2.2 above, leadership is concerned with the human element of the operations, whereas management is concerned with the operational techniques of the organization. Anantatmula (2010:14) emphasizes this by stating that management is concerned with the making of decisions about processes and functions in order to improve operational efficiency and effectiveness, while leadership, conversely is about

motivating and guiding people to realize their potential and achieve tougher and challenging organizational goals.

It is important to understand that the distinction between management and leadership is not always obvious (Anantatmula 2010:14). Skulmonski and Hartman (2009:63) showed this in a survey, which sought to identify critical competencies that are required by a project leader, given the inherent limitations of the project leader as derived from the project structure and compared to the traditional management structure. The traditional management structure enables the manager authority, which he/she may use to direct the employees towards the organisational goals (Young & Dulewics, 2008, 18). Leadership, therefore, becomes an imperative *modus operandi* if both the projects and projects management should be successful. While management is associated with control and organisation, leadership requires abilities to cope with both challenges and to motivate people.

The word leadership often carries with it explicit concepts such as vision, confidence, management skills and charisma. Due to it being appealing as a proposition, it can provide motivation for development, which may not otherwise be present in an organization or in an individual (Mumford and Gold, 2004: 9). House *et al.* (2004: 47) claim that motivation is a key component of leadership and leadership is amongst others, the ability to motivate others to contribute towards the effectiveness and success of the groups of which they are members. Kerzner (2006: 35) observes that projects fail to meet time and cost targets owing to poor morale, lack of motivation, poor human relations, poor productivity, and a lack of commitment from employees. Good people who are well led always find a way to make things happen to overcome the many challenges that are inherent in any engineering or construction project; the project manager's ability to lead his or her people effectively can have a significant impact on the success of a project (Benator and Thumann, 2003: 101). Leadership is, therefore, a skill of influencing the behaviour of people to achieve results; this is of utmost importance when requirements for projects must be met (van Eeden *et al*., 2008: 264). Leadership can also regarded as a complex process by which a person influences others to accomplish a mission, task, or objective and directs the

organization in a way that makes it more cohesive and clear. A leader carries out this process by applying certain attributes such as beliefs, values, various skills, knowledge and ethics.

2.4 Leadership – different types of leadership, their pros and cons

Extensive research has been conducted on the different types of leadership, and in this study focus is places on the two prominent leadership styles, namely transactional and transformational leadership. van Eeden *et al*. (2008: 253) suggest that different styles of leadership are appropriate at different stages of the project life, even though leadership styles and competencies are not directly related to project success. Leadership is crucial for the facilitation of various project success factors that contribute to project performance (Anantatmula, 2010: 13). It is worthwhile clarifying at the outset that the subject of linking general management and leadership theories with project management leadership is well researched (Turner, 2006). Benator and Thumann (2003: 205) confirm that leadership involves using necessary skills to energize and direct a diverse group of people to give high performance, willingly and enthusiastically throughout the life cycle of a project. Research has shown that the success of a project manager is measured according to his ability to formulate an integrated system that enables him to initiate, plan, implement, monitor and control large volumes of data, which will assist to solve problems and make decisions (Burke, 2007:16). Diverse project management approaches are suitable for different project types, and different competency profiles and leadership styles of a project manager are appropriate for different types of projects. Neuhauser (2007:22) views leadership as either a matter of contingent reinforcement of followers by a transactional leader or the moving of followers beyond their self-interests for the good of the group, organization, or society by a transformational leader hence this type of leadership is known as transactional-transformational leadership.

Transformational leadership: Research on transformational leadership suggests that it is a form of leadership, which is especially suited to fostering organizational change (Yukl 2008:712). Ruggieri (2009:1018) states that transformational leaders increase their followers' level of interest, respect the group's obligations and mission, demonstrate qualities, which induce respect and pride, become role models, and examine new prospects for solving problems and reaching goals by encouraging followers to find new solutions and propose new ideas. Transformational leadership comprises four dimensions, namely idealized influence, inspirational motivation, individualized consideration, and intellectual stimulation (Bass & Riggio, 2006: 15).

Table 2.3: Four dimensions of transformational leadership

Idealized influence	• Implies that followers respect, admire, and trust the leader and emulate his or her behaviour, assume his or her values, and are committed to achieving his or her vision and making sacrifices in this regard. • The leader shows dedication, a strong sense of purpose and perseverance, and confidence in the purpose and the actions of the group that helps to ensure the success of the group and gives followers a sense of empowerment and ownership. • He or she behaves morally and ethically.
Inspirational motivation	• Refers to the leader(s enthusiasm and optimism in creating a vision of the future, thus stimulating similar feelings with followers. • The leader is seen to commit to the vision, specific goals and expectations are clearly communicated, and confidence is expressed in followers' ability to achieve these expectations.
Individualized consideration	• Implies that the leader considers the ability of followers and their level of maturity to determine their need for further development. • He or she acts as a mentor giving personal attention, listening to others' concerns, and providing feedback, advice, support, and encouragement. • The leader furthermore designs appropriate strategies to develop individual followers to achieve higher levels of motivation, potential, and performance. • Support is provided and progress monitored.
Intellectual stimulation	• Implies a leader who values the intellectual ability of followers and who encourages innovation and develops creativity. • Others are encouraged to reframe problems, use a

		holistic perspective in understanding problems, question the status quo, and approach problems from different angles, thus creating readiness for change and developing the ability to solve current and future problems.

Source: van Eeden *et al*. (2008: 255)

Transactional leadership; van Eeden *et al*. (2008, 255) state that transactional leadership involves a social exchange process where the leader clarifies what the followers need to do as part of a transaction (successfully complete the task) to receive a reward or avoidance of punishment (satisfaction of the followers' needs), which is contingent on the fulfillment of the transaction (satisfying the leader's needs). Transactional leadership is based on two factors: contingent reward and management by exception; a transactional leader will thus offer positive reinforcement, prizes, praise, compliments, and rewards when goals are reached and will utilize negative reinforcement such as punishment and reproach when errors are made or when failures occur (Ruggieri, 2009: 1018). Spinelli (2006: 17) cited in Bass, (1985) and Bass and Avolio (1990) states that a limitation of the transactional leadership style is that it offers little encouragement to exceed and achieve performance beyond the transactional contract.

Table 2.4: Three dimensions of transactional leadership

Contingent reward leadership	• Providing role, task clarification and psychological rewards
Management by exception (active)	• Active vigilance of a leader to ensure goals are met
Management by exception (passive)	• Leaders intervene after mistakes have happened

Source: Turner & Muller (2005: 52)

Over the last 75 years six schools of leadership have evolved, five of which have suggested that different leadership styles are appropriate in different circumstances (Turner & Muller, 2007: 22). Transactional leadership tends to be transitory, since once a transaction is completed the relationship between the parties may end or be redefined; transactional leaders promote stability, while transformational leaders create significant change in both followers and organizations, (Achua & Lussier, 2010: 354). According to Lane and Daft (2010: 424), transactional leaders clarify the role and task requirements of subordinates, initiate structure, provide appropriate rewards and try to be considerate towards and meet the social needs of subordinates. Transactional leadership remains popular among leaders and managers (Gosling & Marturano 2008: 167).

Table 2.5: Six early schools of leadership

Trait school	• This school of management suggests good leaders exhibit certain traits which they are born with.
Behavioural school	• This school of management assumes effective leaders display given behaviours or styles, which can be developed. • Most authors from the behavioural school assume different behaviours or styles are appropriate in different circumstances.
The visionary school	• This school of management identifies two types of leaders, those who focus on relationships and communicate their values, and those who focus on process, called transformational and transactional leaders, respectively.
The contingency school	• This school of management can be summarized as an "it all depends" approach.
The emotional intelligence school	• This school assumes all managers have a reasonable level of intelligence. • What differentiates leaders is not their intelligence, but their emotional response to situations.
The competency school	• This school says effective leaders exhibit certain competencies. • It encompasses all the previous schools because traits and behaviours are competencies, it says certain competency profiles are appropriate in different situations, it can define the competency profile of transformational and transactional leaders, and it suggests emotional intelligence as one of four groups of competencies.

Source: Turner & Muller (2007: 22)

Goleman *et al*. (2002: 42) suggest six management styles, with different profiles of competencies: visionary; coaching; affiliative; democratic; pacesetting; and commanding, and they also identified nineteen leadership competencies, which are grouped into four dimensions:

1. Personal competencies
    - self-awareness; and
    - self-management.
2. Social competencies
    - Social awareness; and
    - Relationship management.

2.5 Leadership competencies required for project success in project management

Success – what constitutes project success? Researchers have suggested that projects should be rated as successful when they are completed within or near the estimated schedule and budget, and produce an acceptable level of performance; these three criteria, which are often known as the triple constraints, are quite popular, and were used in the current study (Mahaney & Lederer, 2011:103). The most significant success factors for project teams is that they have a common and shared idea of what difference they are trying to make as a result of the project. Benator and Thumann (2003:104) state that leadership is the process of influencing individuals or groups to accomplish an organizational goal or mission. Anantatmula (2010, 13) cites Jugven and Muller (2005) by stating that extensive research found that the definition of project success transitioned over a period of time from a narrow focus of completing a project within time, cost and scope to expanding the focus by including stakeholder requirements.

Competencies – what are competencies? Lewis (2003: 20) goes one step further by dividing competences into primary and secondary. He states that project managers must harness their primary competencies, namely people-orientated skills, and here he

refers to negotiation skills, personal skills, dealing with conflict and so on and describes skills that deal with technology as secondary. Mumford and Gold (2004: 54-55) also speak of a split in management competences. They state that management competences can be approached in two ways, namely the behaviour approach and the standards approach.

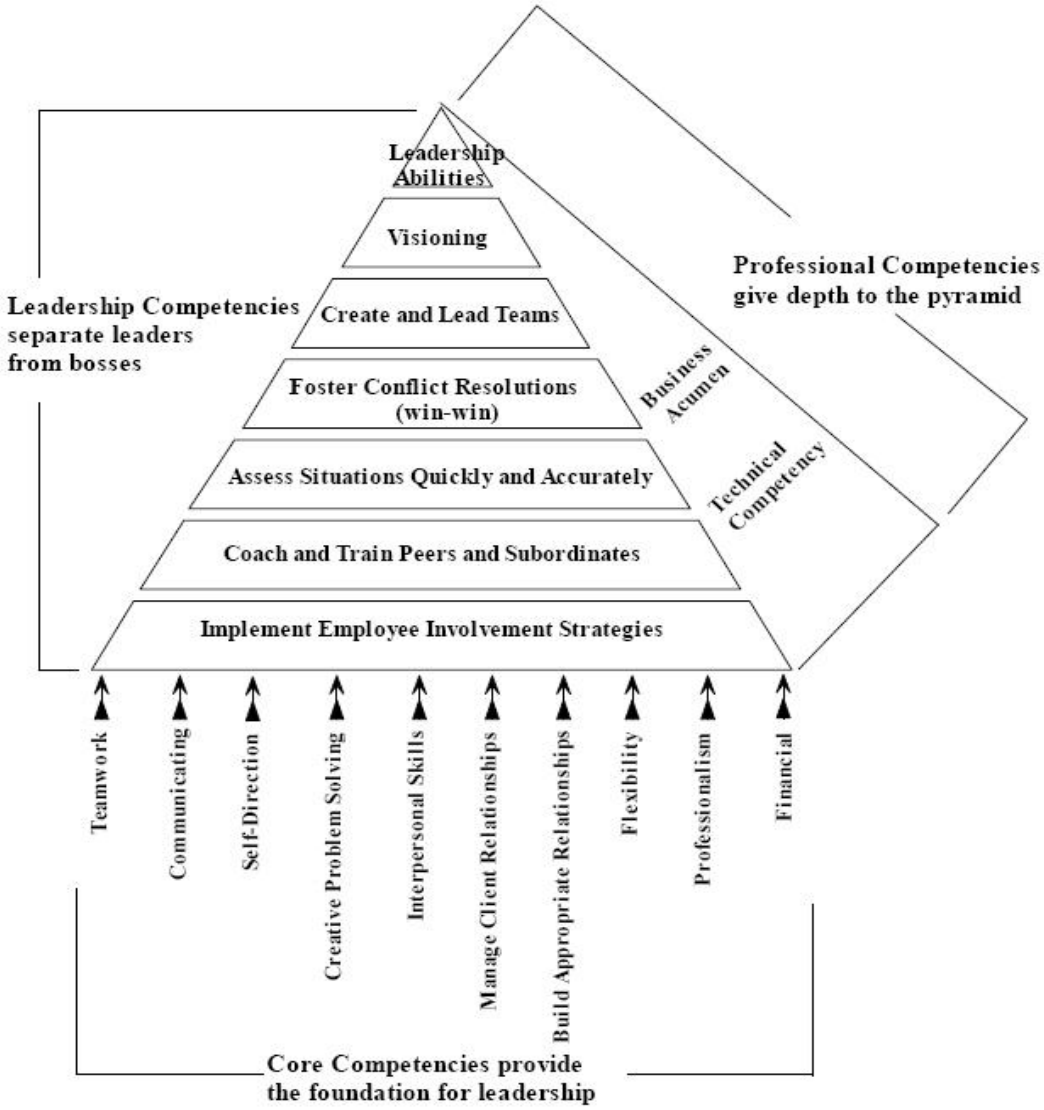
Project management and projects: Traditionally, project management was associated with the construction and defence procurement industry, but in recent years most proactive companies are structuring their work as projects and using project management techniques to ensure successful completion (Burke, 2007: 17). The Project Management Institute (PMI), a global standards and credentialing body for the project management profession, defines project management as the application of a body of knowledge, skills, tools and techniques to project activities to meet project requirements, all of which are documented in the Project Management Body of Knowledge (PMBOK Guide) (Project Management Institute, 2009).

Project: Klastorin (2004: 3) defines a project as a temporary endeavor which is undertaken to create a unique product or service; alternatively, it can be seen as a well-defined set of goals, tasks or activities that must be completed in order to meet the project objectives. A project can also be described as an endeavor in which human, financial and material resources are organized in a novel way to undertake a unique scope of work (Turner, 2009: 2). Project management is both a science and an art. It is perceived as a science because it is supported by charts, graphs, mathematical calculations and other technical tools which are known as hard skills required for project management.

Leadership competencies are regarded as a critical component for achieving organisational success and should receive much attention (Benator & Thumann, 2003: 101-127). The research on leadership by Benator and Thumann clearly identifies and points out what these competencies are that are required for effective leadership?

According to Hartman & Skulmosk (2009: 61), competencies are performance-based and include knowledge, skills, attitudes, and personal characteristics that can be improved with experience and/or training.

Figure 2.1: Pyramid of leadership



Pyramid of Leadership

Source: (Clark, 2001: 6)

Clark (2001: 6) mentions three competencies, which are required for effective leadership that allows for motivating employees, directing systems and processors and guiding the business towards common goals, and allows the organisation to increase its value. The three competencies, as mentioned by Clark, are core competencies, professional competencies and leadership competencies. The way in which Clark integrates these competencies will allow project leaders to be more effective in their project delivery, as shown in Figure 2.1above.

2.6 Summary

This chapter discusses the matrix structure and the challenges that it presents the project manager. One of the challenges that we highlighted within the matrix structure was the authority gap. We defined the authority gap as the limited power that the project manager has within the matrix structure because resources are shared between the project manager and the functional manager. The author further highlighted that this sharing of resources creates divided loyalty amongst subordinates. The existence of the authority gap disempowers the project manager because he/she has no hiring and firing power, unlike the functional manager within the organization. We further made a comparison between the matrix structure and the project organization and found that the project manager has more authority in the project organization compared with the matrix structure. We also highlighted the differences between a project manager and a functional manager and from this differentiation we could see that a project manager is someone that possesses leadership skills and we pointed out that the project manager is more concerned with the human element of the operations, unlike the functional manager who is concerned with processes and functions in an attempt to improve the efficiency of the business. We further considered the different types of leaderships, their pros and cons and what leadership qualities/competencies a project manager should have in order to become an effective project leader.

Chapter 3 – Hard and soft skills and the development of the tools and techniques of project management to date

3.1 Introduction

Many text books divide the skills that are required for effective project management into soft and hard skills. Lester (2007:5) asserts that many text books divide the skills that are required in project management into hard skills and soft skills. The hard skills cover subjects such as business case, cost control, change management, project life cycle, work break down structure, project organization, network analysis, and earned values analysis. It also covers risk management, quality management, estimating, tender analysis and procurement. The soft topics include health and safety, stakeholder analysis, team building, leadership, communication, information management, negotiation, conflict management, and dispute resolution. Other items included in the soft topics are value management, configuration management, financial management, marketing and sales and law. Pant and Baroudi (2008:125) concur with Lester by asserting that the hard skills are those skills that can be taught and may change with acquisition of new knowledge. These skills talk to the technical abilities of individuals much like an electrical engineer understanding building plans.

To effectively manage and lead in a project environment, a person should develop both soft and hard skills. Soft skills include communication and leadership activities and hard skills can include risk analysis, quality control, scheduling, budgeting work and so forth; soft and hard skills go hand in hand (Kloppenborg, 2011:5-6). Project management tools (hard skills) are the guide that supports the process to deliver, as dictated by the firm's strategy for competitiveness and profitability, and techniques are what to use in order to achieve those (Milosevic, 2003:20). According to Harrin (2007:100- 101), project management is largely about hard skills: dates, money, resources, ticking of tasks; but to do those successfully, you need an appreciation of soft skills: for those

elements of project management it is too easy for onlookers when faced with time pressures and other crisis. Soft skills are as much a part of the project manager's job as making sure that tasks are delivered on time, and as much a part of the overall success as one's end product. These soft skills include stakeholder identification and management, understanding the culture of the team, putting together and using a communication plan, being present and available for your team, giving your team praise and guidance, obtaining buy in from one's team and also from the senior management in practice, not just on paper, but understanding who is accountable for decision making. They also include ensuring that people know why the project is happening, offering training to back up the communication if necessary, being positive and being an agent of change yourself-never let anyone catch you saying that the project is a waste of time.

Harrin (2007:102) further asserts that soft skills are also important in a project environment because frequently the project manager will not have line management authority for people working on the project. Harder to quantify and measure, soft skills have to do with how people relate to each other and include things such as communication, listening, engaging in dialogue, giving feedback, collaborating as a team member, solving problems, contributing in meetings and resolving conflicts, (Steeves, 2010:229). El-Sabaa (2001:2) suggests that the ideal project manager will have highly developed human skills and is sensitive to the project stakeholder's needs and is motivating to the project team. Barry and du Plessis (2004:1) identify the significance of soft skills as a contributor to project success and asserts that projects require human interface, and the skills for this interface are soft skills, while they use emotional intelligence to gauge soft skills. Mersino (2007:8) defines emotional intelligence as the ability to recognize and regulate emotions in ourselves and others, which by implication is the ability to self-manage one's emotions and both understand and manage the emotions of others. It is also essential to emphasise the relationship between intelligence quotient (IQ) and emotional intelligence (EI) and leadership competencies, as these intelligences inform to a large degree the behaviour of the leader in relation to the subordinates and or followers (Pant & Baroudi, 2008:126). An

easier explanation of IQ and EI is that IQ (hard skills) is book smartness and carries you through school, but EI (soft skills) is street smartness and carries you through life. IQ, you are born with, and EI you develop as you grow.

The balancing of these two key attributes is what an effective project leader should possess to play a key role in the success of a project. Bourne and Walker (2004:227) state that as the project management discipline moves into less traditional environments, where projects manage change and deliver intangible results, the project manager needs soft skills and the success of projects is dependent on the project manager's ability to amalgamate and utilise both of these skills. According to Alam *et al.* (2007:224), the competence of the project manager is in itself a factor in the successful delivery of projects. Bourne and Walker (2004:229) further assert that management of relationships with stakeholders is essential for project success, while they also point out that successful relationship management is a combination of the project manager's knowledge, combined with hard and soft skills. Belzer (2001:1) also agrees and states that the success of a project depends on the project manager's ability to understand when and how to use hard skills and implement soft skills for the purpose of:

- Working within an organization;
- Defining the business value;
- Clarifying vision;
- Determining requirements;
- Providing direction;
- Team building;
- Resolving issues and;
- Mitigating risk.

Verzuh (2005:30) summarizes leadership as part of the art of soft skills and states that leadership skills are learned through experience, sensitivity and basic knowledge of the science of management. It is also an honest reality that the upbringing of people including culture and religion, has a lot to do with the way that they perceive leadership (Pant & Baroudi, 2008:126). This, together with experience exposure training may assist in developing certain leadership traits and rejecting some to meet the situations in question. An example is the botho leadership philosophy (Smit, *et al.,* 2007:17) and its

orientation towards human relations as compared to the traditional western leadership styles of them and us in the work place. The postulates of the botho leadership are based on the concept that you are who you are because of other people. This, therefore, focuses on human relations largely, and this constitutes the large part of the soft skills by their definition. However Gillard (2009:725), cites Sampson (2007) by stating that the skills that are required for project management are now often divided 50/50 into traditional 'hard' skills, such as risk management and scheduling, and 'soft' people-oriented skills such as interpersonal communication.

3.2 Soft skills

Crosbie (2005:46) cites Daniel Goleman (1995) and defines soft skills as emotional intelligence, and he suggests that the possession and use of soft skills contribute more to an individual's ultimate success or failure than technical or intelligence. Skulmonski and Hartman (2009:62) cite Lechler (1998) by arguing that soft competencies contribute more to project success than technical activities such as planning and control. Gillard (2009:723) agrees and postulates that excellent interpersonal or soft skills are necessary requisites for success. To effectively manage and lead in a project environment, a person should develop both soft and hard skills, which include communication and leadership (Kloppenborg, 2011:6). While technical skills are important, the critical skills that you need to be a successful project manager are not technical; they are leadership and management skills (soft skills)—skills that will help you to lead and manage the project in such a manner that the project's objectives are achieved (Benator and Thumann, 2003:3). Heldman and Heldman (2007:10-11) postulate that project managers must have a wide variety of skills and they must have high competency levels in those skill sets. They further state that the four corner stones frame the skill set of every good project manager, and they define them as soft skills: 1) leading; 2) communicating; 3) team building and motivating; 4) negotiating and problem solving; while the project management house is constructed from these skills (Heldman & Heldman, 2007:10-11). Ramesh and Ramesh (2010:4) assert that they believe that

practical soft skills are seldom taught, but are often caught and they cannot be formally taught in the same way as one would teach engineering principles or mathematics, but people learn more by observation and example setting; soft skills are somewhat like survival instinct, as people get fine-tuned and adapt to their environment. For the purpose of this study we shall focus on four aspects of soft skills that are required by a project manager to be successful in delivering projects.

3.2.1 Emotional intelligence

In project management it is argued that the need for emotional intelligence is even more pronounced than in most business environments and this is because in project management relationships must develop more quickly (Pryke and Smyth, 2006:88). Emotions play a role at work, no matter what your position is in an organization; emotions are a special concern for those in the project management discipline because they play a direct role in the success of a project manager and they provide the framework for interpersonal skills (Mersino, 2007:5). Kousholt (2007:90) cites Goleman by defining emotional intelligence as the abilities such as self-motivation; persisting in spite of disappointment; controlling one's impulses and being able to defer the fulfillment of a wish; being able to control one's mood and prevent worries from overshadowing the ability to think; being able to emphasize with others' feelings; and being able to cope.

According to Mersino (2007:12), emotional intelligence can help project managers to:

Develop stakeholder relationships that support the project's success:

- Relationships are key to a successful project manager;
- This includes the relationship with our team members, as well as with the other stakeholders; and
- Strong relationships with all stakeholders will buffer the project manager during difficult times, help gather more complete information, support when needed and enable the project manager to make better decisions.

Anticipate and avoid emotional breakdowns:

- Emotional breakdowns happen when we lose it;
- They are the office equivalent of road rage. Over the life of a project great stress can be experienced; and
- For some project managers this stress pushes them over the edge and causes them to do something undesirable.

Deal with difficult team members and manage conflict:

- In an ideal project there are no difficult team members and conflict is manageable;
- However, this is rarely the case in practice;
- When we seek out high performing individuals for our teams, we often encounter difficult team members.
- Emotional intelligence can provide us with tools to work with different difficult individuals, help us to identify ways in which we contribute to the problem and help us to work through issues with those parties; and
- Emotional intelligence can help a project manager to recognize or even anticipate conflict and deal with it before it derails the project.

Leverage emotional information to make better decisions:

- Our emotions are like our own personal radar;
- They provide us with a steady stream of information about ourselves, our team members and our environment;
- When we are in touch with and able to access our motions, we can leverage that information to make better decisions, whereas if we are not in touch with our feelings, we will miss out on vital information about our environment. Emotions provide us with an extra data point that we need to make better decisions; and
- They give us intuitive or gut sense of what we need to do next.

(Kousholt, 2007:90 - 91) cites Goleman by emphasizing that a person that has high emotional intelligence is characterized by the following five personal competencies:

1) Personal insight: Knowing what we feel here and now and using these preferences to guide our decisions. Precise self-estimation – knowing one's strengths and weaknesses. Self-confidence – being certain of ones' value and own ability.
2) Self-Management: managing our emotional states so that they do not present an obstacle to, but facilitate the task at hand; being conscientious and deferring the fulfillment of needs in order to reach our goals; the ability to put emotional unpleasantness behind one. Self-control – being able to manage chaotic feelings and impulses. Trustworthiness – being able to maintain honesty and integrity as norms. Conscientiousness – taking responsibility for one's own conduct. Renewal – feeling secure about and open to new thinking, new approaches and new information.
3) Motivation: using our strongest preferences to move and guide us towards our goal, to help us take initiatives and improve ourselves and to be persistent when we encounter obstacles and frustration. Achievement drive – the desire to improve oneself and to reach the highest standards. Commitment – to adjust to a group's or organization's objective. Initiative – readiness to grasp opportunities. Optimism – persistence to strive to achieve goals in spite of obstacles and setbacks.
4) Empathy: to sense what others feel, to be capable of looking at things in perspective, to cultivate contacts and swing with many different people. Understanding others – being sensitive to others' feelings and perspectives and taking an active interest in what they are interested in. Helping others to develop – being sensitive to others' needs for development and supporting their abilities. Service orientation – to anticipate, discover and meet customers' needs. Utilize diversity – to create opportunities with the help of peoples' diversity. Political awareness – to read the groups' emotional undercurrents and power structures.
5) Social skills: to be good at managing emotions in relation to others and to be able to read social situations and network precisely; to be able to associate with others without friction; to use these skills to persuade, lead, negotiate, and settle disagreements, to co-operate and work in teams. Influence – to master efficient

persuasion strategies. Communication – to listen with an open mind and give clear convincing messages. Conflict management – to negotiate and settle disputes. Leadership – to inspire and control individuals and groups. Catalyse change – to implement and manage change processes. Create attachment – to cultivate useful relationships. Cooperate – to work with others towards a common goal. Team spirit – to create group synergy in the work aimed at collective objectives.

Project managers who master emotional intelligence will set themselves apart from other project managers and they will excel in their careers through delivering the project to the client's specifications (Spolander and Martin, 2012:116).

3.2.2 Self-awareness

Self-awareness relates to the project manager being cognisant of what they are capable of achieving with the right mind set.

Mersino (2007:33) explains self-awareness as the ability to be cognisant of our own feelings and how they affect other people, and it is about how you are feeling in the here and now; he further describes it as the first building block of emotional intelligence. Belling and Mangelaars (2004:1) suggest that the foundation of the maturity of a project manager can be found in his growth as a person. Garcia (2008:80) defines self-awareness as the ability of a person to recognize his existence in terms of behaviors, feelings and tendencies; one of the key components of self-awareness is one's ability to practice personal accountability for personal and professional decisions, and self-awareness helps us to communicate more effectively because we can gauge our interaction with others. Pryke and Smyth (2006:81) speak to three specific self-awareness competencies, which are outlined below

- Emotional self-awareness – involves knowing what one feels. It is formally defined as recognising one's own feelings and how they affect performance.
- Accurate self-awareness – individuals who hold this competency understands their strengths and areas where they need to improve. They seek feedback to

learn from their mistakes and know when to work with others whose strengths complement their own.

- Self-confidence – defined as having a strong sense of self-worth and capabilities. It can be seen when presenting oneself in an assumed manner. Presenting oneself with confidence is essential to gather support for one's ideas and to inspire others to follow.

Flannes and Levin (2001:276) assert that the best approach for handling stress is to develop a strong sense of self-awareness and self-knowledge of your personal style, your own sources of stress, and your most adaptive methods to reduce stress. They further assert that the most successful project manager is the one who finds their own personal solutions for personal stress.

3.2.3 Leadership

Bourne and Walker (2004:229) presents a three dimensional model to consider when assessing project success.

Table 3.1: Three dimensional model for project success

Dimension1	• Focuses on the effective use of the project management skills set.
Dimension 2	• Focuses on leadership skills that the project manager uses to motivate their team members.
Dimension 3	• Focuses on satisfying the needs and wants of a project's most influential stakeholders, including the project manager's senior management stakeholders and his/her peers.

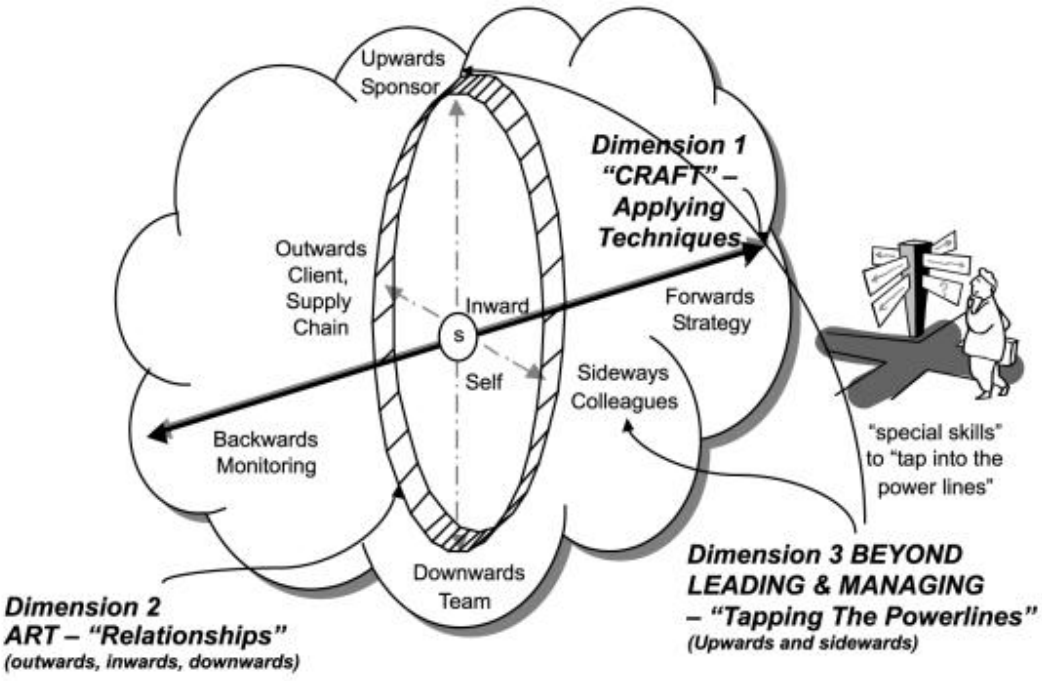
Source: Bourne& Walker (2004:229)

Bourne and Walker (2004:229) explain Figure 3.1 below, namely Dimensions of project influence as follows; Dimension 1, looking forwards and backwards: it is predominately a skills set that relies on techniques that value certainty and abhor ambiguity when monitoring and controlling projects.

Dimension 2, looking outwards refers to managing the needs suppliers and clients, and requires a mix of management and leadership skills. Looking downwards requires considerable leadership skills to motivate followers and to ensure that all team members have their needs and wants satisfied. The project manager must also manage him/herself, from the point of view of personal discipline, but also from the point of view of having needs and wants that must also be met through successful completion of the project. Looking inwards, outwards and downwards (and some limited examples of upwards) are dimension 2 skills. Managing upwards to the obvious set of senior management stakeholders is generally considered to be part of dimension 2.

Dimension 3 focuses on satisfying the needs and wants of a project's most influential stakeholders, including the project manager's senior management stakeholders and his/her peers. Third dimension skills, looking sideward and upwards.

Figure 3.1: Dimensions of project influence



Source: Bourne and Walker (2004:229)

Geoghegan and Dulewicz (2008:58 – 67) suggest that the project manager will need considerable leadership skills to motivate performance amongst the team members in order for him/her to deliver a successful project. Leadership is a dynamic relationship, which is based on mutual influence and common purpose between leaders and collaborators, where both are moved to higher levels of motivation and moral development as they influence others through action to accomplish an objective (Freiberg & Freiberg, 1996: 298). Olsen (2006:2) points out five key leadership qualities that a project manager must possess:

- Clearly defines the vision, expectations and the spirit of the project;
- Inspires and motivates team members by clearly providing performance expectations;
- Proactive and forward thinking, looking for potential obstacles and mitigating problems before they impact the project;
- Effectively listens and addresses concerns; and
- Gains knowledge from lessons learned.

Crawford (2000:6), in her literature review, ascertains that the competence, knowledge, qualities and skills of the project manager are critical to project success, and ranked amongst the top five competencies based on frequency, namely: leadership, planning, team development, communication and technical performance.

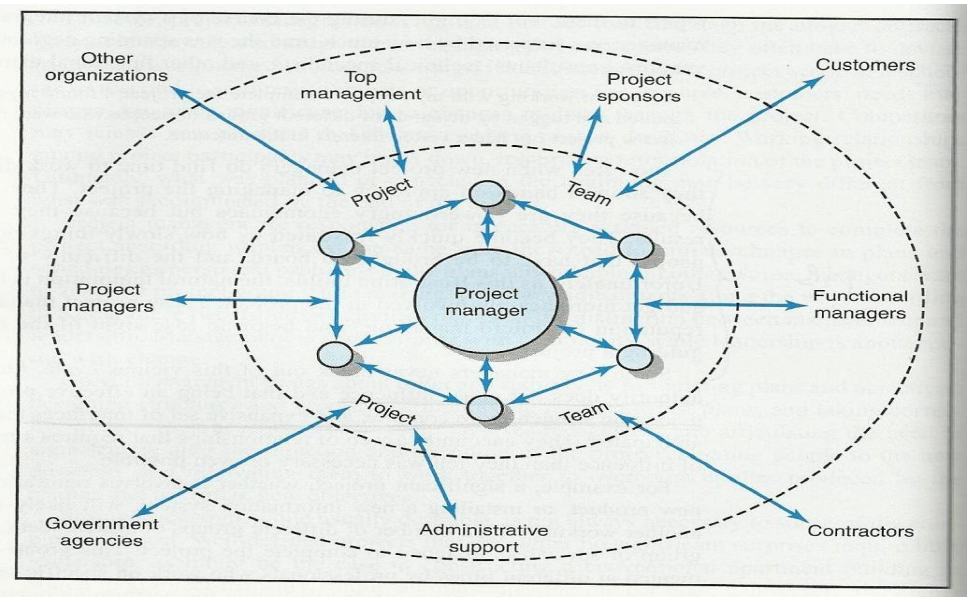
3.2.4 Communication

Communication at the right level and with the right people is at the heart of successful project management (Hartman, 2000:28). Henderson (2008:48) posits that in the dynamic and evolving world of project management, communication is a critical and desirable competency that is required from a project manager. Schwalbe (2006:150) postulates that because of the importance of project communication, every project should include a communication management plan – a document that guides project communication, and this will vary depending on the needs of the project. It should address the following items: 1) Stakeholder communication requirements; 2) Information to be communicated, including format, content, and level of detail; 3) Identification of

who will receive the information and who will produce it; 4) Suggested methods or guidelines for conveying the information; 5) Description of frequency of communication; 6) Escalation procedures for resolving issues; 7) Revision procedures for updating the communication management plan; and 8) A glossary of common terminology used on the project.

Depending on the nature of the project, there are a number of different groups outside the organization that influence the success of the project; the most important is the customer for which the project is designed, (Gray and Larson, 2008:317). Figure 3.2 below indicates the network of stakeholders in a typical project environment.

Figure 3.2: Network of stakeholders



Source: Gray & Larson (2008:318)

Dekker (2004:9) supports the idea of the necessity of effective communication skills, and suggests that it is critical to project success, and because the end user defines success, there are three things that should be managed correctly; these are getting the right requirements, and performing the right developmental processes and effective communication. Henderson (2008:48) cites Krahn and Hartment (2006) by asserting

that listening and verbal communication were rated by experts in the top 10 of a list of 50 competencies, which one important for the project manager.

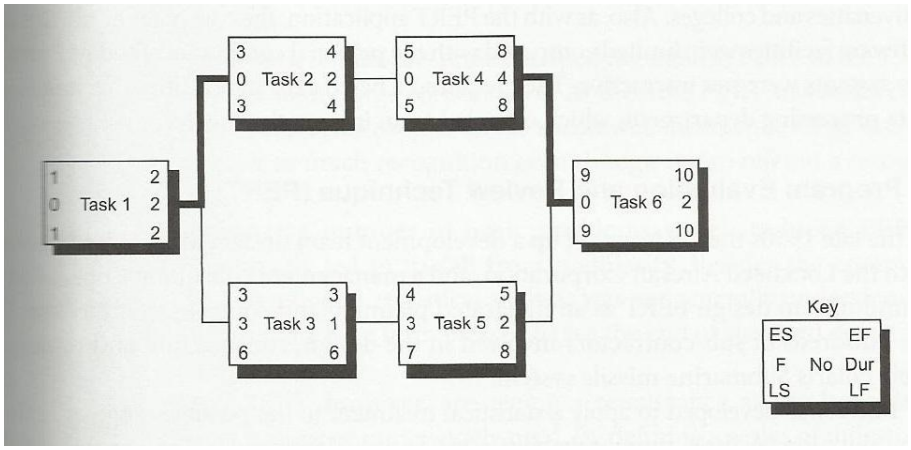
3.3 Hard skills

3.3.1 Critical path method

The CPM was first used in Great Britain in the mid-1950s in the construction of a central electricity generating complex, and its full potential was later realized by Walker of Du Pont and Kelley of Remington Rand in the USA (Uher, 2003:39). For project managers to effectively plan and control a project, they should be able to process large amounts of data quickly and accurately to enable them to create order in a complex situation. The critical path method (CPM) which offers a structured approach to projects has been designed to meet this need (Burke, 2006:131). According to Gray and Larson (2008:159), the CPM has long been considered as the holy grail of project management. The CPM uses a deterministic approach, which suits a project where time duration can be accurately predicted, and this method was initially established to address the time cost trade off dilemma (crashing) that is often presented to project managers, where there is a complex relationship between project time-to-complete and cost-to-complete (Burke, 2007:32).

Gitman and McDaniel (2008:72) assert that in the critical path method, the manager identifies all of the activities that are required to complete the project, the relationship between these activities, and the order in which they need to be completed. Hillier and Lieberman (2010:401) posit that the critical path is one of the routes through a project network following the arcs from the start to the finish node in a project. The CPM makes use of a network diagram and the project networks consist of activities that should be completed in a particular sequence and are shown by the use of arrows to nodes (the activities to be completed). Figure 3.3 below illustrates a typical network diagram, which is used to determine the critical path in a project:

Figure 3.3: Network Diagram (showing logical relationships)



Source: Burke (2007:31)

According to Figure 3.3, if you take task 5 as an example, you will note that the activity has an early start of 4 days and a late start of 7 days, which means that the activity can start the latest on the 7th day and this gives a float of 3 days. This indicates that this activity is not on the critical path, whereas if you take task 1, task 2, task 4 and task 6 you will realise that there is no float on these tasks, which means that they are on the critical path.

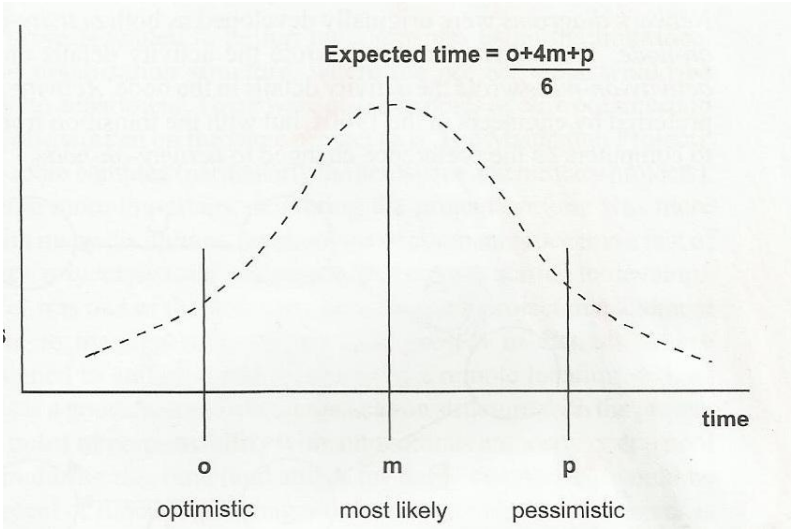
Newell (2005:61) posits that a critical path of a project is a group of activities that cannot be delayed without delaying the completion date of the entire project, namely the series of activities that have zero float. Schwalbe (2010:228) further points out that to calculate the critical path, one must add the duration of all the activities on each path through the network diagram; the longest path is the critical path.

3.3.2 Program Evaluation and Review Technique (PERT)

In the late 1950s the US navy established a development team under Admiral Red Raborn with the Lockheed aircraft corporation, and a management consultant Booz Allen and Hamilton designed PERT as an integrated planning and control system to

manage the hundreds of sub-contractors involved in the design, construction and testing of their Polaris submarines missile system (Burke, 2006:18). Burke (2007:32) asserts that unlike the CPM that uses a deterministic approach, which suits a project where time duration can be accurately predicted; PERT uses a probabilistic approach, which suits a project where time duration may vary over a range of possibilities. According to Gray and Larson (2008:226-227), the PERT method uses three time the estimates for each activity ; what this basically means is that each activity can range from an optimistic time to a pessimistic time, and a weighed average can be computed for each activity. Burke (2006:18) confirms this by stating that the PERT technique was developed to apply statistical treatment to the possible range of activity time duration; a three time probabilistic model was developed, using pessimistic (p), optimistic (o) and most likely (m) time duration, as shown in Figure 3.4 below.

Figure 3.4: PERT three time probabilistic analysis



Sources: Burke (2006:19)

By using the PERT weighted average (expected time) for each activity duration estimate, the total project duration estimate takes into account the risk or uncertainty in the individual activity estimates (Schwalbe, 2010:236). Sharma (2006:5) states that although the PERT and CPM techniques were developed independently by two different organizations, they are more or less similar and now referred to as the network

techniques; despite of their common features, style of functioning and close interaction, the two can be clearly differentiated from each other as shown in Table 3.2 below.

Table 3.2: Differences between PERT and CPM

PERT	CPM
Is an even orientated technique - attention is focused on starting and completion of the activities	Is an activity orientated technique – attention is focused on starting and completion of the event
The time estimates are assumed probabilistic i.e. three times (most likely, pessimistic and optimistic)	The time estimates for the activities are assumed deterministic. i.e. single estimate of time
Allows uncertainties in time	Ignores change elements and employs only normal and crash cost time
More emphasis is on shortening and controlling project time on the understanding that reduction in time elements would eventually lead to cost reduction	Stresses on cost concepts i.e. deploying additional resources to shorten the duration of the job
Devotes its attention in areas like research and development programs	Mainly used for construction programme
Does not take past experience into consideration	Relies on past experience
Makes use of notions like network, event activity, slack	Makes use of notions like arrow diagram, node, job ,float

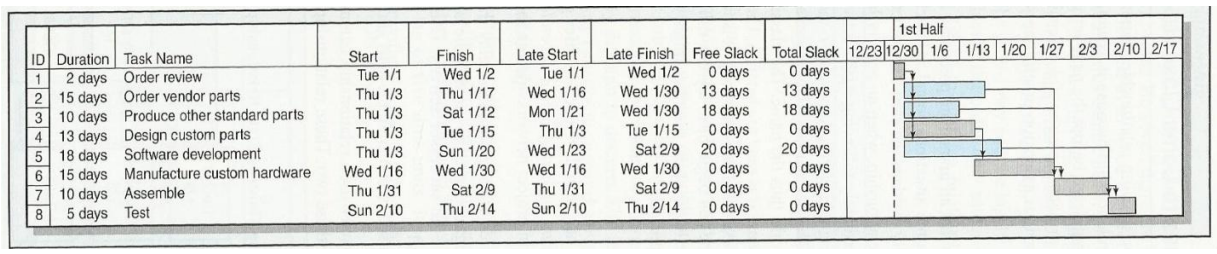
Source: Sharma (2006:5-6)

3.3.3 Gantt charts

Gantt charts were developed almost 100 years ago by Henry L, Gantt, a mechanical engineer and management consultant (Shelly & Rosenblatt, 2010:104). Gant charts are sometimes referred to as bar charts, since the activities' start and end dates are shown as horizontal bars and they provide a standard format to display project schedule information by listing project activities and their corresponding start and finish dates in a calendar format (Schwalbe, 2010:224). Gantt charts can present an overview of the project status, but they do not provide detailed information that is necessary when managing a complex project (Shelly & Rosenblatt, 2010:105).

Gray and Larson, (2008:161) proposed that the Gantt charts are popular because they present an easy to understand clear picture on a time scale horizon; they are used during planning, resource scheduling and status reporting; they are in a two dimensional format with activities down the rows and time across the horizontal axis. The Gantt chart shows the planned and actual progress for a number of tasks that are displayed against a horizontal time scale; in addition, it is used as a tracking tool for actual progress against planned progress, hence it is an effective communication tool because it can portray a lot of data quickly for interested parties (Taylor, 2008:78). One of the disadvantages of the Gantt chart is that it does not show interdependencies, and the main advantage of using Gantt chart is that they provide a standard format for displaying project schedule information and they are easy to create and understand (Bidgoli, 2004:116).

Figure 3.5 : Air Control project – Gantt Chart



ID	Duration	Task Name	Start	Finish	Late Start	Late Finish	Free Slack	Total Slack
1	2 days	Order review	Tue 1/1	Wed 1/2	Tue 1/1	Wed 1/2	0 days	0 days
2	15 days	Order vendor parts	Thu 1/3	Thu 1/17	Wed 1/16	Wed 1/30	13 days	13 days
3	10 days	Produce other standard parts	Thu 1/3	Sat 1/12	Mon 1/21	Wed 1/30	18 days	18 days
4	13 days	Design custom parts	Thu 1/3	Tue 1/15	Thu 1/3	Tue 1/15	0 days	0 days
5	18 days	Software development	Thu 1/3	Sun 1/20	Wed 1/23	Sat 2/9	20 days	20 days
6	15 days	Manufacture custom hardware	Wed 1/16	Wed 1/30	Wed 1/16	Wed 1/30	0 days	0 days
7	10 days	Assemble	Thu 1/31	Sat 2/9	Thu 1/31	Sat 2/9	0 days	0 days
8	5 days	Test	Sun 2/10	Thu 2/14	Sun 2/10	Thu 2/14	0 days	0 days

Source: Gray & Larson (2008:163)

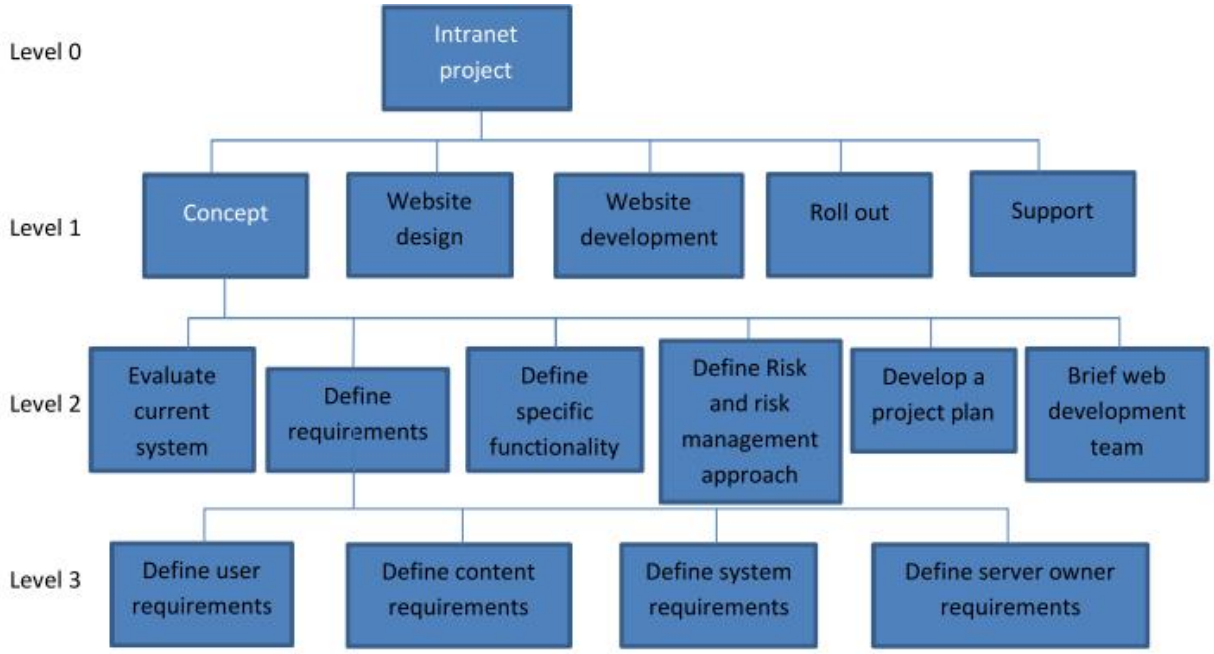
Figure 3.5 above shows that activity 1, 4, 6, 7 and 8 are on the critical path, whereas the other activities have a float, which is also referred to as slack. The Gantt chart also assists project managers to identify items that are on the critical path by indicating the early start and early finish for the different activity.

3.3.4 Work Breakdown Structure (WBS)

Starting a new project is like starting to write a book – you have an idea of what you want to do, but are not sure where to start (Haugan, 2002:1), and the WBS helps define the way forward. A WBS defines the project, the work to be done and can display them on a chart; essentially, it is a methodology for project organizations, planning and control based on deliverables rather than simply on individual tasks or activities (Harrison and Lock, 2004:104). Schwalbe (2006:103) defines the WBS as a deliverable-orientated grouping of work involved in a project which defines the total scope of the project, and is a document that breaks down all the work that is required for the project into discrete tasks which are grouped into a logical hierarchy; she goes on further to state that it is often depicted in a graphic format, similar to an organizational chart.

Everyday practice is reviling with increasing regularity that the creation of a WBS to define the scope of the project will help to ensure delivery of the project's objectives and outcomes (Norman, *et. Al.,* 2008:16). One of the primary purposes of the WBS is communication; it is, therefore, necessary to have a format with which the audience can identify; however, it is important that the WBS is based on the deliverables – the output products of the project, regardless of how the elements are described (Haugan, 2002:14).

Figure 3.6: WBS Chart

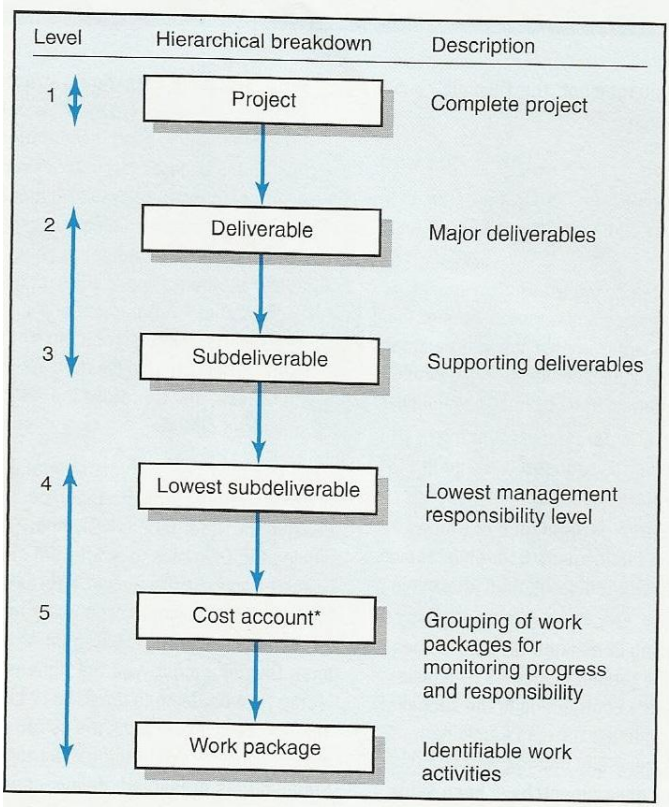


Source: Schwalbe (2006:104)

Figure 3.6 shows that Level 0 refers to the name of the entire project and the main groupings for the work are listed in the second tier of boxes, called Level 1; each of the boxes in the levels below level 1 can be broken down into subsequent tiers of boxes to indicate the hierarchy of the work until the last point, which is on the bottom of the hierarchy (Schwalbe, 2006:104).

Burke (2007:129) refers to the WBS as a hierachical structure, which is best presented by a graphical subdivision of the scope of works in boxes; the logical subdivision of all the network elements is easy to understand and assimilate, thus helping the project participants to quantify their responsibility, and gain their commitment and support. The WBS is one of the key scope management tools to subdivide the scope of work into manageable work packages that can be estimated, planned, assigned and controlled, thereby improving productive efficiency, built method and executive strategy (Burke, 2006:95 - 115).

Figure 3.7: Hierarchical breakdown of the WBS



Source: Gray and Larson (2008:100)

Taylor (2008:40) postulates that the WBS is the most important project management tool because it completely identifies all the work that is described by the project scope and provides the basis for detailed project planning, control and implementation. Burke (2008:96) refers to it as the backbone of the project. Gray and Larson (2008:97) further posit that the use of the WBS assures project managers that all work elements and all products are identified, to integrate the project with the current organization, and to establish a basis for control.

3.4 Summary

Hence, a project manager requires specific tools to effectively and efficiently deliver a successful project that is in line with the project sponsor's specifications. This chapter

has discussed the soft and hard skills, which are required by a project manager to enable him /her to deliver successful projects. The tools (hard skills) that were discussed are: Critical Path Method (CPM); Program and Evaluation Review Technique (PERT); and Gantt charts and the Work Breakdown Structure (WBS). The chapter also presented the soft skills that are required by a project manager to be effective and efficient to deliver successful projects. The items that were discussed under the soft skills were: self-awareness, leadership and communication. This chapter also highlighted that these skills should be used side by side in order for a project manager to be able to deliver a successful project.

Chapter 4 – Research methodology

4.1 Introduction

This chapter focuses on the research methods that were used to obtain the results and the study's conclusions. It also focuses on the target population that was studied and the sample, sample size, method that was used to collect data, system that was used to interpret the data, assumptions that were made for the research, and the scope and limitations of the study. Welman, Kruger and Mitchell (2005:2) posit that research is a process that involves obtaining scientific knowledge by means of various objective methods and procedures. Research is further defined as a systematic and methodical process of gathering information and investigation with a view to increasing knowledge and finding solutions to particular problems (Collis & Hussey, 2009: 3). According to Kumar (2005:14), in a research process, one works within a framework of a set of philosophies, uses methods that have been tested for validity and reliability, and attempts to be objective and unbiased. The process of research involves identifying a problem, identifying what kind of information is appropriate to addressing that problem, collecting the information and analysing, as well as interpreting that information and its context (Maylor & Blackmon, 2005:5).

4.2 Research design

According to Maylor and Blackmon (2005:55), research design is the plan to conduct a study through translating one's research methodology into specific research methods, which are the techniques that you use to collect and analyse data. Churchill (2002:144) concurs with Maylor and Blackmon by asserting that research design is described as a framework or action plan that gives direction concerning steps and procedures that are required to see the study to its fruitful conclusion. It describes what will be done with participants in order to reach conclusions regarding the research problem (Welman *et al.,* 2005:52). Panneerselvam (2004:12) postulates that the research design provides a

complete guideline for data collection; the following include the essence of a research design:

- Selection of research approach;
- Design of sampling plan;
- Design of experiment; and
- Design of questionnaire.

It involves identifying a problem, identifying what kind of information is appropriate to address that problem, collecting the information and analysing, as well as interpreting that information and its context (Maylor & Blackmon, 2005:5). It comprises issues, which relate to decisions regarding the purpose of the study, the type of investigation, the study setting, the extent of researcher interference and the level at which the data will be analysed (Sekaran, 2003:117-118). A good research design provides information concerning the selection of the sample population's treatments and controls that should be imposed (Singh and Nath, 2007:160). A combination of both qualitative and quantitative research design is used in this survey.

4.3 Theoretical aspects of research methodology

According to Kumar (2005:14), in a research process one works within a framework of a set of philosophies, uses methods that have been tested for validity and reliability, and attempts to be objective and unbiased. Goddard and Melville (2007:1) assert that research is not merely a process of gathering information; rather, it is about answering unanswered questions or creating that, which does not currently exist. Research methodology has many dimensions and research methods do constitute a part of research methodology (Kumar 2008:5). Kothari (2005:10) outlines the importance of knowing and understanding research methodology or ways in which research is conducted. These are presented below.

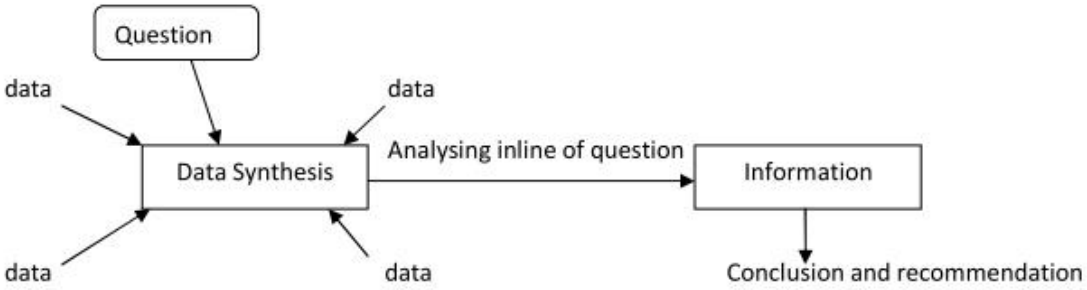
- For an individual who is interested in a career within research, the importance of understanding research methodology and techniques is evident, since research methodology and research techniques are the tools of his or her business. The

knowledge of research methodology provides sound training to the new researcher and enables him or her to do better research. Thus, for those who aspire to make it in a research career, they should acquire knowledge and skills to use research techniques, and should understand the logic behind them.

- The knowledge of ways in which research is conducted will indoctrinate an ability to evaluate and use research results with confidence.
- The knowledge of research methodology enables the use of making smart decisions regarding problems that one faces in practical life at particular points in time. Thus, when one knows the process of conducting research, then one may have the satisfaction of learning a new intellectual tool, which enables him or her to look at the world and judge daily experiences objectively.

Kumar (2008:5) posits that research methodology is a way to systematically solve research problems and it may be understood as a science of studying how research is done scientifically. Bhattacharya (2006:6) asserts that unless research is understood in its spirit, it cannot be undertaken with success. Figure 4.1 below indicates a method that one should follow when conducting research.

Figure 4.1: A model of research



Source: Badke (2004:6)

Figure 4.1 indicates that when conducting research, you begin with a question; you collect data; you synthesize the data; you analyse it in light of the question (leading to information); and then you come up with conclusions and recommendations (Badke, 2004:6). Kumar (2008:2) argues that the main purpose of research is to discover answers to questions through the application of scientific procedures. He further postulates that its purpose is to find out the truth, which is hidden and, which has not been discovered so far.

4.4 Research strategy

The research strategy defines the general approach to the research investigation (Walsh and Wigens, 2003:69). Johnson and Onwuegbuzie (2004:14-15) further asserts that the research strategy may take into account the use of qualitative methods or quantitative methods or a mix of both the methodologies in one study. This study uses a combination of both methods. According to Brannen (2005:4), the researcher must establish a strategy to enable him/her to address a research question. Wellman, *et al*., (2005:56) stipulate that there are different kinds of sampling. For the purpose of this study, the author chose the quantitative method. Kumar (2011:103) postulates that quantitative study designs are specific, well structured, have been tested for their validity and reliability, and can be explicitly defined and recognised. Quantitative research methods emphasize the production of precise and generalizable statistical findings, and are generally more appropriate to nomothetic aims (Rubin and Babbie, 2011:67). Thomas (2003:1) posits that the quantitative method focuses on measurements and amounts (more or less, larger and smaller, similar and different) of the characteristics that are displayed by people and events that the researcher studies.

4.5 Target population

The target population for this research was classified into two, namely project practitioners, and operations people who are managed by the project managers. It is assumed that subordinates know how they want to be treated, and will, therefore, evaluate their managers' performance in the leadership role. The research was conducted in the Gauteng province amongst construction companies within the

province. A population refers to a precisely defined body of people or objects, which are under consideration in a study for statistical purposes (Collis & Hussey, 2009:62). According to Churchill, *et al*., (2002:630), a population consists of all the elements that have a chance of being sampled to participate in the study. Sekaran (2003:265) concurs by defining a population as a group of people, events or things of interest that the researcher wishes to investigate. The target population is the larger population such as all children with a learning disability, to whom the research study results are to be generalized (Johnson and Christensen, 2012:257). Goddard and Melville (2007:34) state that it is often not practical or possible to study the whole population. According to Bhattacharya (2006:81–82), the population is said to be completely defined if at least the following terms are specified:

Elements – project managers and people involved with project managers;

Sampling unit – professionals involved in the built environment;

Extent – area of the study and its limitations; and

Time – period of the research.

Defining the population improperly can introduce bias in the study (Stevens, *et al*., 2006:183). A sampling bias is the sample, which is not representative of the study population, and hence does not allow generalization of the sample results to the entire study population (Bryman & Bell, 2003:91). The population targeted is project practitioners who are affected by the leadership of the project managers, these were randomly selected in construction companies in Gauteng.

4.6 Population validity

Population validity refers to the ability to generalize from the sample of individuals on which the study was conducted to the larger population of individuals and across different sub populations within the larger target population (Johnson and Christensen, 2012:257). Burns *et al*., (2008:427) assert that population validity relates to whether a sample of participants responses are an accurate assessment of the target population. Burns *et al*., (2008:427) further state that with regard to population validity, the question

that should be asked is: to what extent is the sample really representative of the target population? Golafshani (2003:599) postulates that validity determines whether the research truly measures, that which it was intended to measure or how truthful the research results are. Cooper and Schindler (2008:318 - 320) postulate that three major forms of validity can be identified, namely content validity, criterion-related validity and construct validity. Cooper and Schindler (2008:289) define validity as the ability of a research instrument to measure what it is intended to measure.

4.7 Sampling selection and method of sampling

A sampling plan is a mechanism by which the sampling units of a study are selected from the sampling frame of the population, and it affects costs and time to conduct the study, hence it should be selected with the utmost care (Panneerselvam, 2004:12). Kothari (2004:153) asserts that a sample design is a definite plan to obtain a sample from the sampling framework and it is determined before any data is collected. The term sampling means selection of a part of a group or an entirety with the sole aim of collecting complete information (Khan, 2008:75). Singh and Nath (2007:160) refers to sampling as an indispensible technique of behavioral research, as the research work cannot be undertaken without the use of sampling. The stratified random sampling technique was used amongst all the respondents that were covered at different construction companies in Gauteng. Because of the serious imbalance in the racial and gender distribution, it was found necessary to stratify the population and avoid skewing the results towards one group of people. Stratified random sampling technique involves dividing the population into homogeneous subgroups, and then taking a simple random sample from each group (Wamocha *et al*., 2012:105). Sekaran (2003:282) postulates that the stratified random sampling method is the most efficient and it is a better choice when differentiated information is needed regarding various echelons within the population. Gerrish and Lacey (2010:148) contend that in quantitative sampling there are two basic types of errors, which are described below.

Random errors: they create less bias, as it is assumed that this type of error is evenly distributed across the sampling frame and, therefore, the frame that is derived

randomly, remains inaccurate but representative of the study population. Any errors will tend to average out across the sample.

Systematic errors: they are not reduced with increased sample size. If a study aims to recruit GPs from a particular list, for example, but certain sorts of GP practices are routinely excluded from that list (for example, single handed practice), then these GPs cannot be selected and the error is not random.

According to Black (2012:228), an advantage of using the stratified random sampling method is that it has the potential to reduce sampling errors. Fink (2006:49) points out another advantage of the stratified random sampling, namely that the surveyor can choose a sample that represents the various groups and patterns of characteristics in the desired portion. The first step in stratification in this study was only construction projects in Gauteng were chosen for the study. The second stage was that, within the firms, only those who were affected directly by the project managers' functions were interviewed.

4.8 Sample size

In view of the nature of the industry and accessibility, together with the level and requirements of the qualification, the sample has been arbitrarily placed at a minimum of 100 respondents. Collis and Hussey (2009:209) define a sample as a subset of the population. Sample design is the theoretical basis and the practical means by which data is collected so that the characteristics of a population can be inferred with known estimate errors (Bhattacharya, 2006:101). Blumberg (2008:237) postulates that the best way to decide on a sample size is by considering factors such as relevance of the population; parameters of interest; the sampling frame; the type of sample; sample size required; and the cost. Klenke (2008:10) asserts that in quantitative studies, the effect of increasing the sample size is to reduce the sampling error. Calculating sample size requires a measure of the variability of differences, usually the standard deviation or variance to be expected in the population (Gerrish and Lacey, 2010:147).

4.9 Method of data collection

The method of personal interviews was used to obtain information by making use of a structured questionnaire. The main reason for the selection of this method is that if there is any ambiguity it will be cleared on the spot, since the author used personal interviews. A questionnaire is said to be the most common data collection instrument in business research (Cooper & Schindler, 2008:329). In market research a questionnaire refers both to questionnaires which are intended for self-completion by survey participants and to survey instruments that are intended to be administered by the interviewer either in a face-to-face interview or telephonically (Brace, 2008:2). The questionnaire was divided into sub-sections, namely demographics and soft skills (primary competencies). Beri (2008:107) asserts that there are two types of structured questionnaires, namely disguised and non-disguised. He further postulates that in a disguised structured questionnaire, the researcher does not disclose the objective of the study, whereas in the non-disguised structured questionnaire, the researcher discloses the objective of the study. Panneerselvam (2004:14) points out five steps to design a questionnaire, namely:

- Identification of research issues and finalization of the set of hypothesis;
- For each issue, formulation of a set of questions and then deciding about the concept and format of each question;
- Deciding about question wording, depending on the types of questions;
- Arrangement of the questions in the questionnaire in appropriate sequence and also deciding on the format of the questionnaire;
- Pre-testing questionnaire; and
- Reviewing the questionnaire for improvements.

A structured questionnaire was used to collect the required data in this survey, there was also included a section with unstructured questions to allow for the benefits of both qualitative and quantitative questionnaires.

4.10 Data analysis

The SPSS (Software Program for Social Sciences) was used for analysis because of its effectiveness and user friendly qualities. The SPSS should help to analyse data;

compile appropriate tables; examine relationships among variables; and perform a test of statistical significance based on research questions (Babbie *et al*., 2001:583). The data was converted into graphs and tables for easy reading and comparison where necessary. Data analysis investigates variables, as well as their effects, relationships and patterns of involvement with the world (Welman, *et al*., 2005:211). Data should be analysed in a manner that ensures that research questions and hypotheses are addressed to ensure that the research objectives are achieved (Anderson *et al*., 2001:97).

4.11 Validity and reliability

Reliability means that different researchers will obtain the same findings if they repeat the study (Maylor and Blackmon, 2005:159). Reliability concerns the consistency of the results, the robustness of the measure and whether it is free of random and unstable errors (Quinton and Smallbone, 2006:130). Validity is the ability of a research instrument to measure what it intended to measure (Cooper and Schindler, 2008:289). Schultz and Whitney (2005:87) contend that the process of validation does not seek to determine whether the test itself is valid, but rather whether the interferences and conclusions that are made on the bias of test scores are valid. Validity determines whether the research truly measures what it is intended to measure, or how truthful the research results are (Golafshani, 2003:599). Cooper and Schindler (2006:318-320) point out three forms of validity, which are presented below.

Content validity – Shultz and Whitney (2005:87) assert that emphasis of the content validity approach is squarely on the judgment of experts on the domain that is being tested.

Criterion-related validity – Conte and Landy (2010:83) contend that the most direct way to support a hypothesis (to connect the predictor and criteria box) is to actually gather data and compute a correlation coefficient, and this is referred to as a criterion-related validity because you correlate test scores with performance measures.

Construct validity – it is based on an integration of any evidence that bears on the interpretation or meaning of the test scores and all types of validity evidence are subsumed within the general framework of construct validity (Angle Jr, 2007:9).

4.12 Sampling bias

Bias occurs when some unintended factor confuses or changes the results in a way that can lead to incorrect conclusions (Macnee, 2008:123). Bryman and Bell (2003:91) define a sampling bias as the sample that is not representative of the study population and it does not allow generalization of the sample results to the entire study population. According to Sullivan (2009:457), sampling bias occurs when some members of the population are more likely to be included in a sample than others. Johnson and Christensen (2012:217) define the bias sample as the sample that is systematically different from the population. The researcher made use of the stratified random sampling method in order to avoid chances of having sampling bias, and Collis and Hussey (2009:209) assert that when using a random sampling method, every member of the population has a chance of being selected. Powers and Knapp (2006:10) argue that the use of random samples rather than convenience samples is one of the ways how investigators can control their conscious or unconscious biases.

4.13 Ethical consideration

Research ethics address the question of which ethically relevant issues that are caused by the intervention of researchers can be expected to impact on people they research (Flick, 2011:215). May people are willing to disclose a lot of personal information during research, hence the researcher should make sure that he/she treats both the participants and the information that they provide with honesty and respect; this is referred to as research ethics (Dawson, 2002:146). Welman *et al*., (2005:181) reveal that ethical considerations come into play at three stages of a research project:

- when participants are recruited;
- during intervention and / or the measurement procedure to which they are subjected; and
- in the release of results that are obtained.

In fulfilling the ethical aspect of research, all the respondents were guaranteed anonymity and confidentiality and they were informed of the purpose of the study and their consent to participate the research was obtained. Flick (2011:216) cites Schnell and Heinritz (2006) by stating that there are eight principles of research, which are outlined below.

Researchers:

1. have to be able to justify why research about their issue is necessary at all;
2. must be able to explain what the aim of their research is and under what circumstances subjects participate in;
3. must be able to explicate the methodological procedures in their projects;
4. must be able to estimate whether their research acts will have ethical relevant positive or negative consequences for the participants;
5. must assess possible violations and damages arising from doing their project – and be able to do so before they begin the project;
6. must assess possible violations and damages identified according to principle 5;
7. must not make false statements about the usefulness of their research; and
8. have to respect the current regulations of data protection.

Wellman *et al*., (2005:201) agree with Flick by stating that the research must pay attention to four ethical aspects of research and these are: informed consent; right of privacy; protection from harm; and involvement of the researcher**.**

4.14 Assumptions made

4.14.1 The respondents will not be biased and be honest to the best of their understanding.

4.14.2 All the questions that are asked will not offend anyone, are well understood, and will all be answered by the respondents.

4.14.3 There will be no restrictions at any of the construction plants in Gauteng from where information and data are collected

4.14.4 This study will assist the author's workplace, as well as all project practitioners, in general

4.15 Scope and limitation of the study

4.15.1 The research was limited geographically for economic reasons, and had time limits when the report had to be submitted.

4.15.2 The research was restricted to approximately 100 people, and this may not be generalized to the entire country.

4.16 Summary

This chapter dealt with the research design and methodology which was used to conduct the research. It included the research design; theoretical aspect of research methodology; research strategy; study population; sampling methods; methods of data collection; and ethical consideration.

Chapter 5 – Presentation and discussion of results

5.1 Introduction

This chapter presents and discusses the results of the study, which are summarized and presented in frequency distribution charts and tables. The aim of the study was to: 1) identify generic competencies of effective project leaders in the construction industry; and 2) identify critical indispensable competencies that the project manager at a construction site needs to reduce project failure. The study was conducted amongst individuals who work in the construction industry in the Gauteng region. A total of 63 individuals at different levels of employment in the construction industry were interviewed. The research instrument was constructed, distributed to a few interviewees (6), and then reconstructed to meet the standards expected from an instrument or questionnaire of its caliber.

The instrument was divided into four sections, the first and second sections dealt specifically with variables that would be measured, as identified and discussed in the preceding literature review chapters. The third section probed other issues that relate to competencies, which are required by effective project managers; this section was purely exploratory and the questions were open-ended. The fourth section was primarily biographical, while the purpose was to assist with screening to see the relevance of the respondents to the questions, as there was a specific target group. Besides, this would allow for separation of perceptions, as provided by different people at different levels. The assumption was made that differences of operational levels (of the respondents) would result in differences in the way that leadership and success are considered.

The SPSS (Software Program for Social Sciences) was used for analysis because of its effectiveness and user friendly qualities. The sections below discuss, to some detail, the data that was collected, and the analysis given thereof. The order of the data analysis and interpretation has been purposely placed as biography is discussed first to give the reader prior understanding of the demography of the respondents, and to interpret the information, which is provided in context. Thereafter the order is followed as set in the research instrument, with Section A being second, Section B being third, and Section C being last. Section C is a special section because it is open-ended and respondents were free to state whatever it was that they thought was important, but was omitted in the questionnaire. For the sake of clarity, each question that was asked is provided, together with the purpose for asking the question. Where

possible, known literature, which relates to particular question is acknowledged and referenced accordingly.

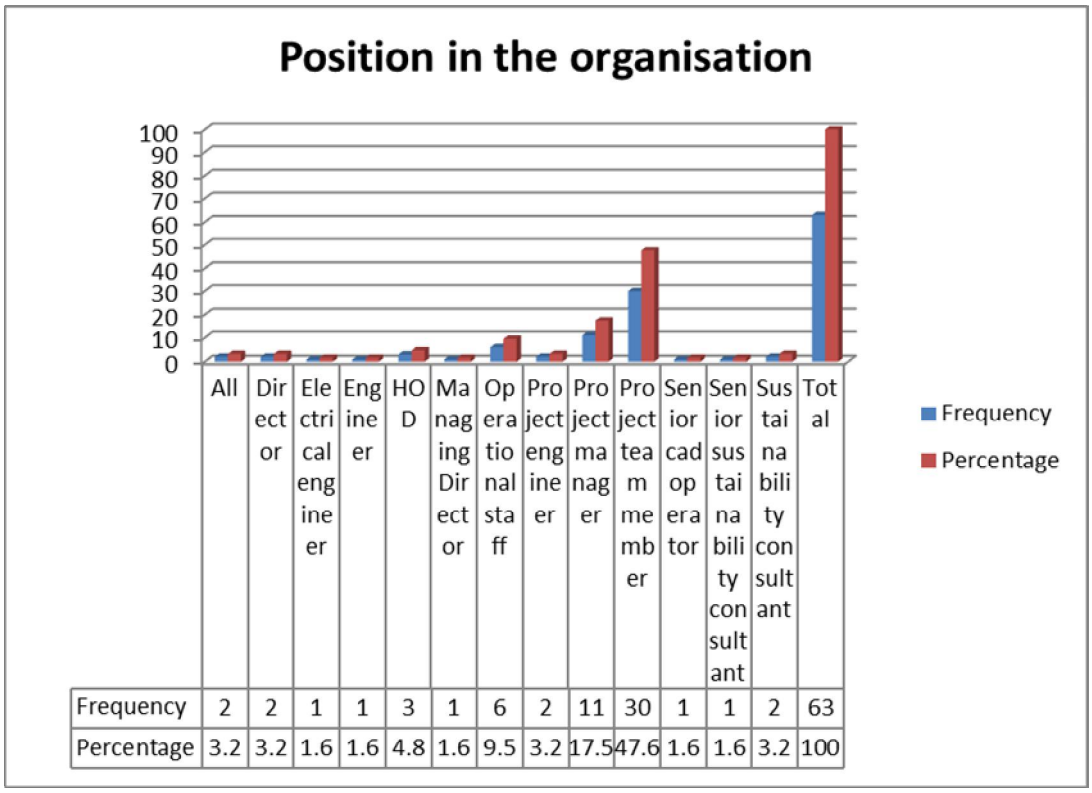
5.2 Section D biography

The questions that were asked in this section included the following: What is your position in the organisation? How long have you been involved in projects at this level? Are you involved in project team meetings? Are senior managers responsible for the day-to-day operations of the project? What industry are you involved in? These questions intended to sought to establish an understanding of the type of respondents in terms of their position in the industry; and number of years in that particular position as an indicator of how much they understand in relation to effective project leadership.

5.2.1 What is your position in the organisation?

Knowledge of the position in the industry had a lot to do with the respondent's understanding of what constitutes effective leadership. The finance manager who is also a team member or part of management may consider working within the budget as an indication of good project leadership. In the same set up a junior employee on whom coercive action was used may be angry because of what they perceive to be inconsideration by the project leader to their plight, hence the project leader may not have certain competencies according to the subordinate's judgment. Figure 5.1 below indicates the positions of the respondents in their organization.

Figure 5.1 – Position in the organisation



	All	Director	Electrical engineer	Engineer	HOD	Managing Director	Operational staff	Project engineer	Project manager	Project team member	Senior cad operator	Senior sustainability consultant	Sustainability consultant	Total
Frequency	2	2	1	1	3	1	6	2	11	30	1	1	2	63
Percentage	3.2	3.2	1.6	1.6	4.8	1.6	9.5	3.2	17.5	47.6	1.6	1.6	3.2	100

Source: Author's own construction

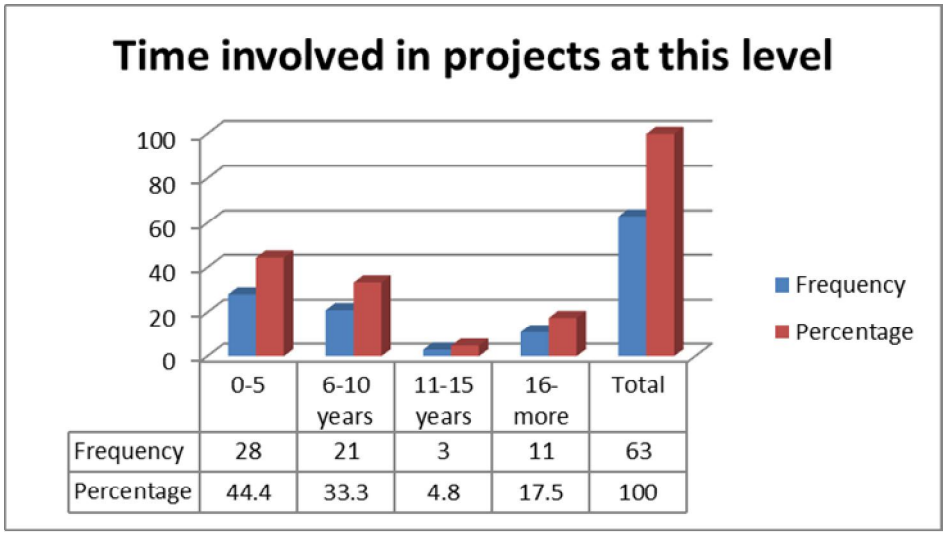
The survey results indicate that the highest group of respondents are individuals that are project team members at 47.6%; they are followed by project managers at 17.5%; operational staff at 9.5%; Heads of Departments (HOD) at 4.8%; directors at 3.2%; project engineers at 3.2%; sustainability consultants at 3.2%; respondents that were involved at all the levels that were on the questionnaires at 3.2%; electrical engineers at 1.6%; engineers at 1.6%; managing directors at 1.6%; senior cad operator at 1.6%; and senior sustainability consultants at 1.6%. The results represent quite a diverse group of individuals. It can be seen that despondence comes from 12 different levels within the project based organization, and this should assist with giving a clearer picture from the different levels with different responsibilities.

5.2.2 How long have you been involved in projects at this level?

The number of years' experience in the industry has a lot to do with the possible development of emotional intelligence Jowah (2013:278) submits that there is a direct relationship between the levels of emotional intelligence and an individual's experience. The more the experience that

they have, the better the respondent will be able to assess the project leadership, because they understand the pros and cons of this leadership. In the same vein, a higher position in the organisation enables the respondent to be in the shoes of the project leader. Figure 5.2 illustrates the requirements as sought by the question.

Figure 5.2 – Time involved in projects at this level



	0-5	6-10 years	11-15 years	16-more	Total
Frequency	28	21	3	11	63
Percentage	44.4	33.3	4.8	17.5	100

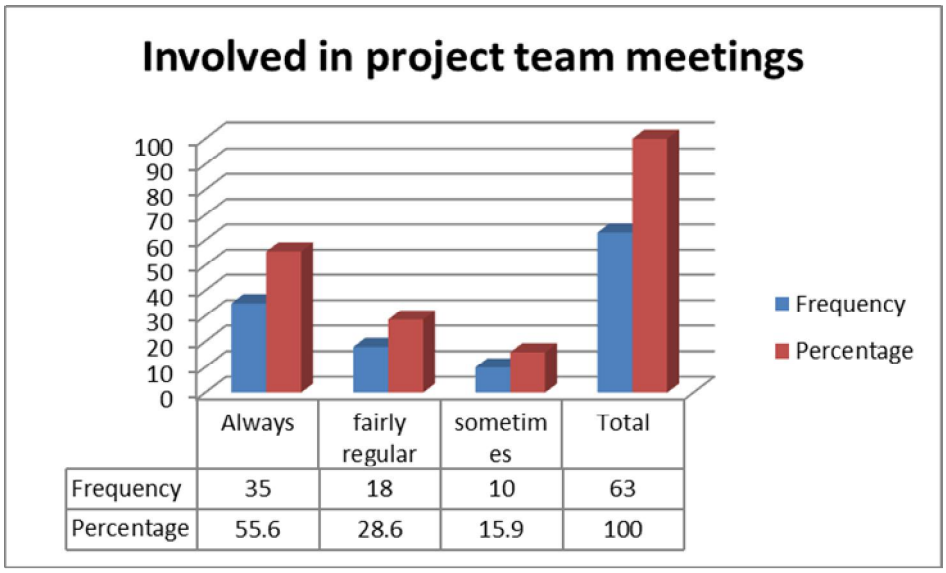
Source: Author's own construction

Figure 5.2 above illustrates that a majority of the respondents (44.4%) have been involved with projects at their level for between 0-5 years; followed by 6-10 years at (33.3%); 16 years-more at 17.5%; and 11-15 years (4.8%). From these results it can be seen that a majority of the respondents have been involved with projects at a professional level for between 0-5 years. This can be attributed to the current trend in the engineering construction industry, where there is a huge gap between professionals in their mid to late 30s and 50+ year old professionals. This gap poses quite a problem for the industry because it threatens the knowledge transfer element of the industry. This also introduces an opportunity for the project management fraternity where these young engineers/professionals can be taught the basics of project management so that they can deliver better projects when compared to their predecessors. In the past, engineers were required to fulfill the roles of project managers without a project management background. Some of the universities have started to include project management in their building environment courses.

5.2.3 Are you involved in project team meetings?

Respondents' involvement in meetings will determine their level of understanding of project management meetings. They should be able to know what project manager A did that project manager B did not do, and hence led to the failure or success of his/her project.

Figure 5.3 – Involved in project team meeting



	Always	fairly regular	sometimes	Total
Frequency	35	18	10	63
Percentage	55.6	28.6	15.9	100

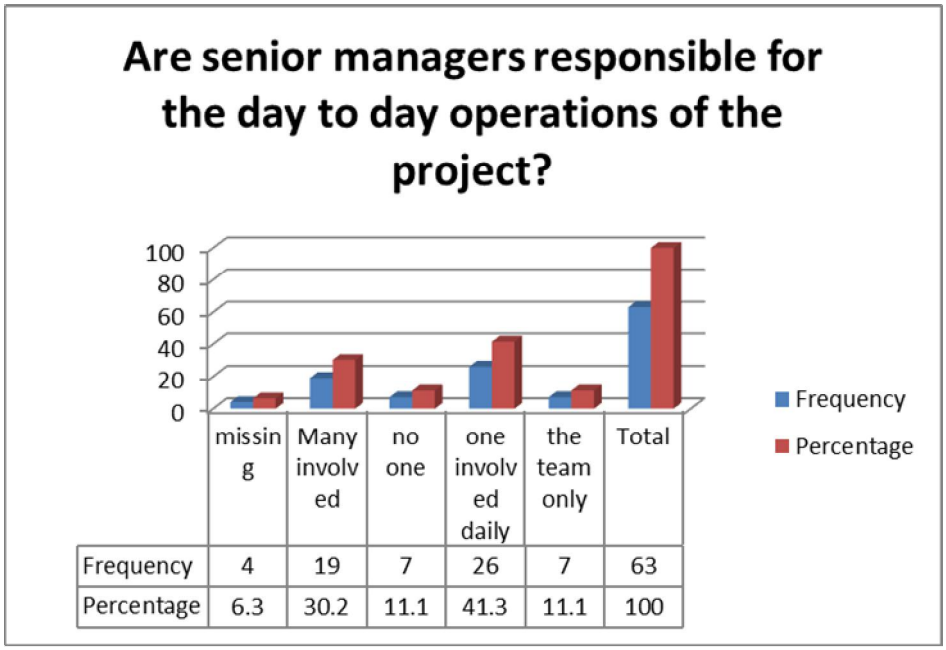
Source: Author's own construction

Figure 5.3 above illustrates respondents' involvement in project meetings with other project professionals, be it at design or progress meetings. A majority of the respondents (55.6%) always attend project team meetings, while 28.6% attend meetings fairly regularly, and 15.9% sometimes attend meetings. These numbers indicate a relationship between the positions of the respondents within the organization where a majority of the respondents are project team members and project managers. It is crucial that the project managers and project team members should attend meetings at all times. This is because it is their responsibility to disseminate information from the project meetings to operational staff and discuss with their internal project teams. Project based organizations have internal team members such as, Cad operators, HVAC engineer, electrical engineers, IT engineers, site engineers, and so on. It does not make business sense to send all these engineers to one meeting, whereas an organization can have an internal project manager with a level of technical knowledge of the different disciplines that will be responsible for attending professional meetings with other project stakeholders from other organizations.

5.2.4 Are senior project managers involved in the day- to- day operations of the project?

For one to understand the road, they need to travel it. Project team members who are involved in project meetings will have more insight into the happenings in the project management meeting environment. Figure 5.4 below illustrates the role that played by senior management on the day to day operations of the project, in a sense of helping or interfering with the project leader's responsibilities and operations. Senior management may not be members of the project team, except where the structure permits, and the project leader has to report to them regularly instead.

Figure 5.4 – Involvement of senior management in day to day operations



	missing	Many involved	no one	one involved daily	the team only	Total
Frequency	4	19	7	26	7	63
Percentage	6.3	30.2	11.1	41.3	11.1	100

Source: Author's own construction

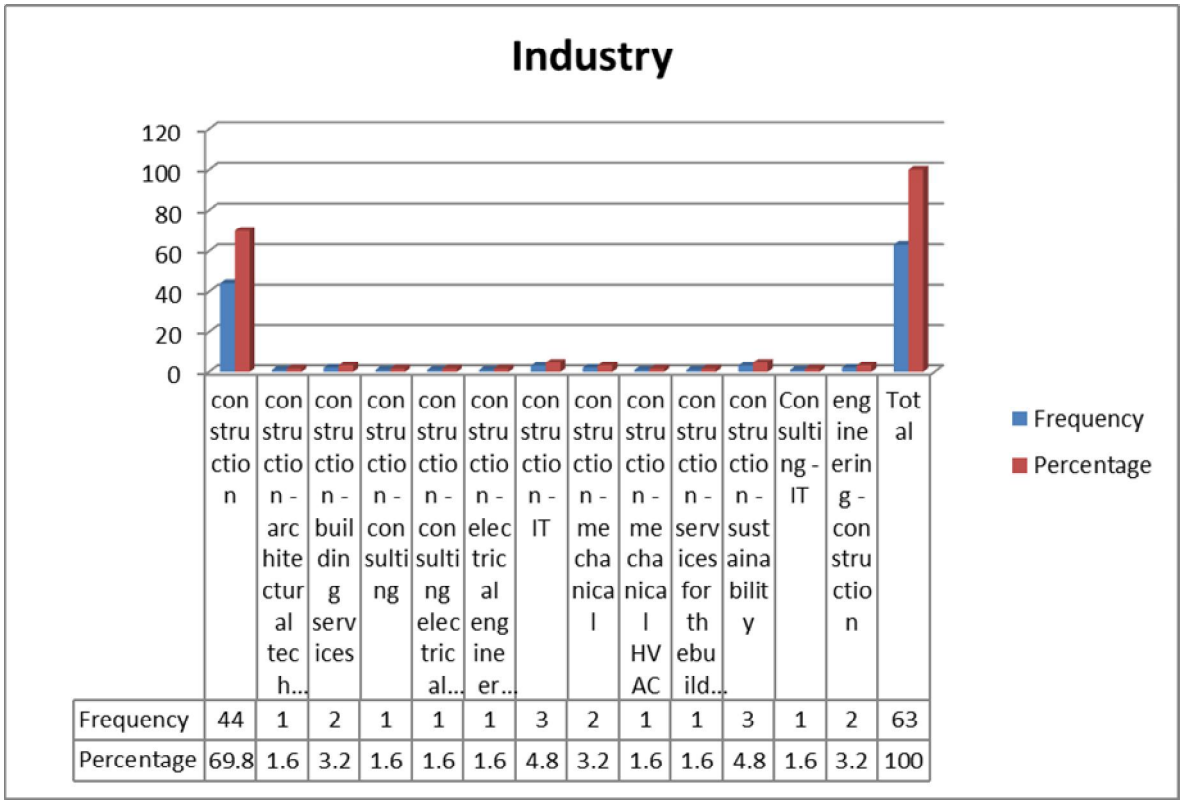
Figure 5.4 above shows that the majority (41.3%) of the respondents indicated that there is at least one senior project manager who is involved in the day to day operations of the project while 30.2% of the respondents stated that there are many involved, and 11.1% stated that there are no senior project managers who are responsible for the day-to-day operations of the project in projects that they are involved in. Another 11.1% indicated that only the team is involved, while 6.3% of the respondents did not answer this question. The varying results may be owing to the nature of projects that the respondents are involved in. Complex projects

require a number of senior project managers because of the complexities and the different sub packages of the project. Conversely smaller projects do not necessarily require that a senior project manager is involved/responsible for the day-to-day operations of the project, because each professional can be responsible for project managing their respective discipline.

5.2.5 What industry are you involved with?

The respondents that were targeted by the study are individuals who are involved in the construction industry. The professionals that have been involved in the construction industry should have great insight into the operations of the construction industry, and should be able to substantially contribute to the study.

Figure 5.5 – Industry are you involved with



	construction	construction - architectural tech...	construction - building services	construction - consulting	construction - consulting electrical...	construction - electrical engineer...	construction - IT	construction - mechanical	construction - mechanical HVAC	construction - services for the build...	construction - sustainability	Consulting - IT	engineering - construction	Total
Frequency	44	1	2	1	1	1	3	2	1	1	3	1	2	63
Percentage	69.8	1.6	3.2	1.6	1.6	1.6	4.8	3.2	1.6	1.6	4.8	1.6	3.2	100

Source: Author's own construction

Figure 5.5 above illustrates the different professions/industries of the respondents. A majority, namely 69.8% is in the construction industry, 4.8% is in the IT division of the construction industry; 4.8% is in the sustainability division of the construction industry; 3.2% is in the building services division of the construction industry; 3.2% is in the engineering division of the

construction industry; 3.2% is in the mechanical engineering division of the construction industry; 1.6% is in the architectural and civil engineering division of the construction industry; 1.6% is in the consulting division of the construction industry; 1.6% is in the consulting electrical engineering division of the construction industry; 1.6% is in the electrical engineering division of the construction industry; 1.6% is in the mechanical/HVAC division of the construction industry; 1.6% is in the services for the building industry; and 1.6% is in the consulting IT. The respondents are all involved in the construction industry, but are from different disciplines within it. Generally, in a construction project you need professionals from different disciplines, namely architecture, structural engineering, mechanical engineering, electrical engineering, wet services engineering, and so on to render a construction project successful.

5.3 Section A – What constitutes an effective leader?

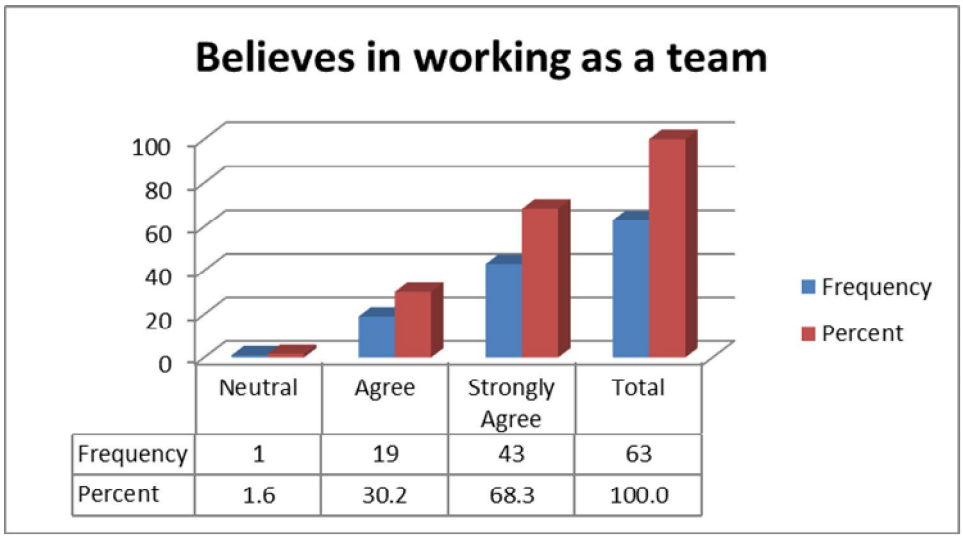
This section presents and discusses the key traits of an effective project leader. The respondents were required to rate the qualities of an effective project leader from pre-determined qualities. The rating scale was between 1-5 with 1 being Strongly disagree, 2 – Disagree, 3 – Neutral, 4 – Agree, and 5 – Strongly agree. . Figure 5.6 considered at the quality of an effective leader as someone that believes in working as a team.

5.3. What do you consider as desirable behavior by a project leader?

5.3.1 Believes in working as a team

The intention of this question was to determine whether the professionals who are involved with project management in the construction industry believe that an effective project manager believes in working as a team. The results of the study are shown in figure 5.6 below.

Figure 5.6 – Believes in working as a team



	Neutral	Agree	Strongly Agree	Total
Frequency	1	19	43	63
Percent	1.6	30.2	68.3	100.0

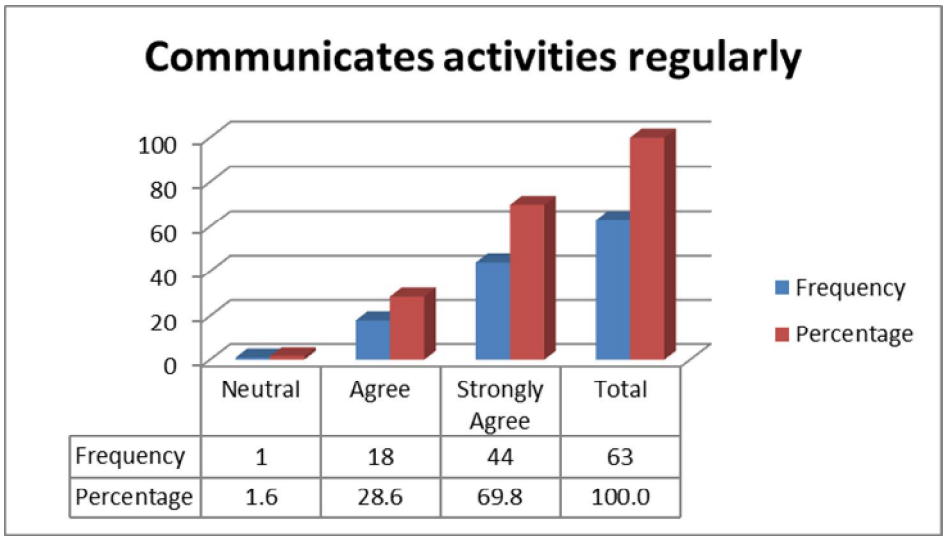
Source: Author's construction

Figure 5.6 above illustrates that a majority, namely 68.3% of the respondents strongly agreed with the statement that an effective project leader believes in working as a team, and 30.2% agreed with the statement while only 1.6% remained neutral. Many scholars agree that an effective leader is someone who has people's skills, and a majority of the respondents here agreed. A project team consists of many individuals with different backgrounds, hence it is critical for a project leader to be someone that can work in a team and encourages team work.

5.3.2 Communicates activities regularly

The intention of this question was to determine the importance of communicating activities to the project team on a regular basis, and to understand what professionals who are involved with project management in the construction industry think about the importance of communication in a project. The results of the study are shown in Figure 5.7 below.

Figure 5.7 – Communicates activities regularly



	Neutral	Agree	Strongly Agree	Total
Frequency	1	18	44	63
Percentage	1.6	28.6	69.8	100.0

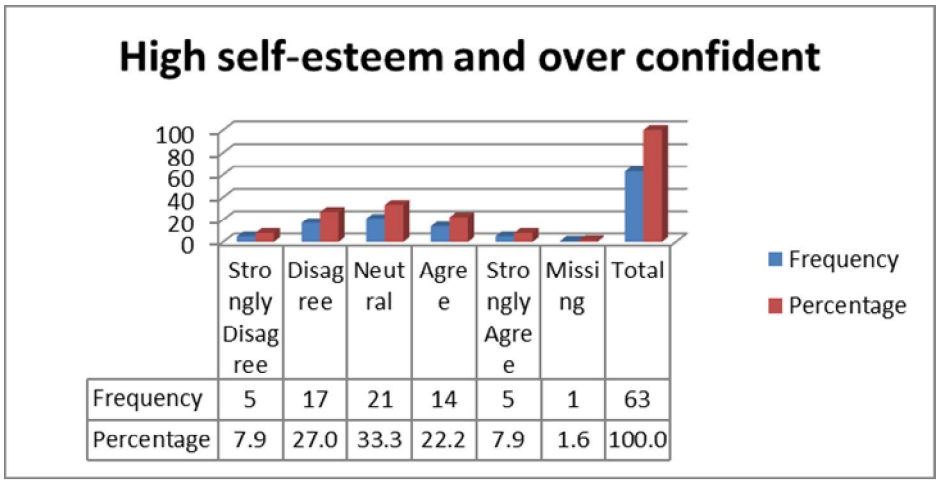
Source: Author's own construction

Figure 5.7 above illustrates that 98.4% of the respondents believe that an effective project leader should be someone who communicates activities regularly, while only 1.6% of the respondents remained neutral. Communication plays a pivotal role in the success of a project. An effective project leader should establish a project communication plan to ensure that the right information goes to the right people at the right time. This will ensure that all the project stakeholders are involved, which will assist with effective decision making and promote team work. Project communication is a key knowledge area with processes that provide critical links among people and information, which are both necessary for successful communication (PMBOK).

5.3.3 High self-esteem

The intention of this question was to determine whether it is important for an effective leader to have high self-esteem and be over confident. The results of the study are shown in Figure 5.8 below.

Figure 5.8 – High self-esteem



	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Missing	Total
Frequency	5	17	21	14	5	1	63
Percentage	7.9	27.0	33.3	22.2	7.9	1.6	100.0

Source: Author's own construction

Figure 5.8 shows that, 30.1% of the respondents believe that an effective leader should have high self-esteem and over confident while a majority (34.9%) disagreed with the statement and 33.3% remained neutral. A total of 1.6% of the respondents did not complete this question. An effective project leader should not be someone who is over confident in a way that causes discomfort to the project team. An effective project leader should be someone who has high self-esteem without causing discomfort to the project team. The attitude of the project leader has direct implications on the success of the project and the performance of project team members. The project leaders' confidence indicates that he/she has a vision, and knows the direction in which he/she is steering the project.

5.3.4 Does not worry about employees' personal problems

The intention of this question was to determine whether an effective project leader should not be concerned about employees' personal problems. The results of the study are shown in Figure 5.9 below.

Figure 5.9 – Does not worry about employees' personal problems

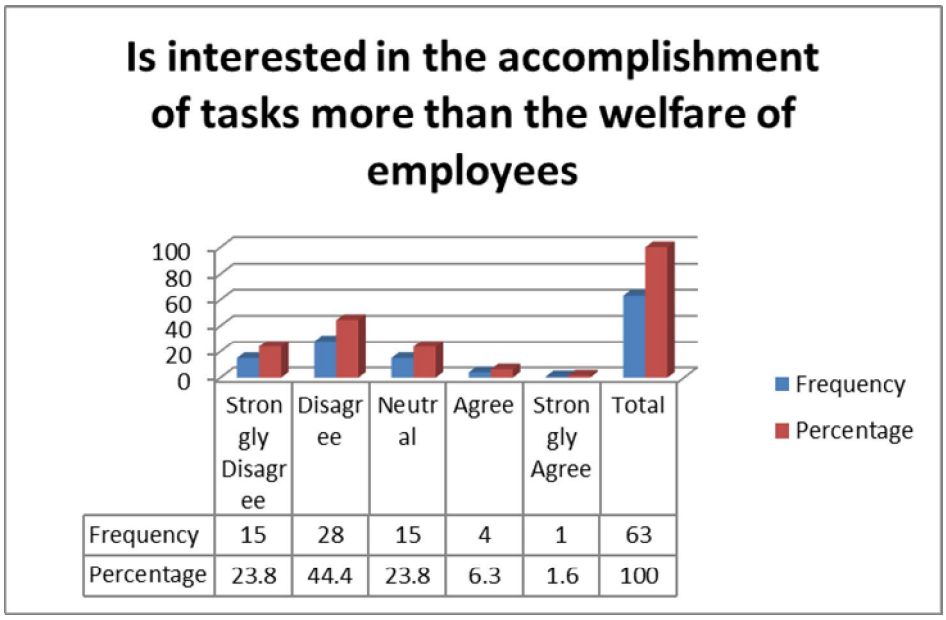
Source: Author's own construction

Figure 5.9 above shows that a majority of the respondents, namely 50.8% disagreed with the statement, while 22.2% strongly disagreed that an effective project leader should not worry about employees' personal problems. A total of 20.6% of the respondents remained neutral on the matter while 6.3% agreed that an effective project leader should not worry about employees' personal problems but should rather be more focused on deliverables and tasks that are related to the project. From the study it can be seen that an effective project leader should care about employee's personal problems. The most important element is that caring should not affect the project delivery in any way.

5.3.5 Is interested in the accomplishment of tasks more than the welfare of employees

The intention of this question was to determine whether professionals who are involved in project management think that a project manager should be interested in the accomplishment of tasks more than the welfare of the employees. The results of the study are shown in Figure 5.10 below.

Figure 5.10 – Is interested in the accomplishment of tasks more than the welfare of employees.



	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total
Frequency	15	28	15	4	1	63
Percentage	23.8	44.4	23.8	6.3	1.6	100

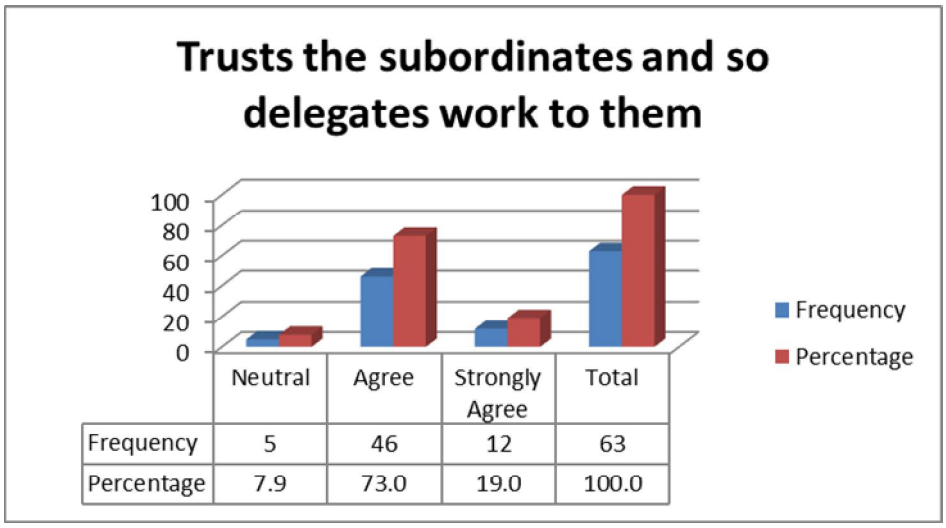
Source: Author's own construction

In Figure 5.10 above it can be seen that a majority of the respondents, namely 68.2% did not agree with the statement, while 23.8% remained neutral and 7.9% agreed that an effective leader should be interested in the accomplishment of tasks more than the welfare of employees. An effective project leader should be careful not to be involved at an emotional level with the project team or individuals in the project team. A reason for this is that project managers can allow themselves to be vulnerable to being manipulated by project team members when it comes to failure to complete deliverables. A project team member who fails to meet deadlines can clearly say to the project manager that the reason for not completing the tasks could be owing to a personal problem that they might have shared with the PM. The best thing to do to avoid such predicaments is not to be too involved with the personal welfare of employees to a level where it can affect the project.

5.3.6 Trusts the subordinates and so delegates work to them

The intention of this question was to determine whether professionals who are involved in project management think that a project manager should trust the subordinates and delegate work to them in order to deliver successful projects. The results of the study are shown in Figure 5.11 below.

Figure 5.11 – Trusts the subordinates and so delegates work to them.



	Neutral	Agree	Strongly Agree	Total
Frequency	5	46	12	63
Percentage	7.9	73.0	19.0	100.0

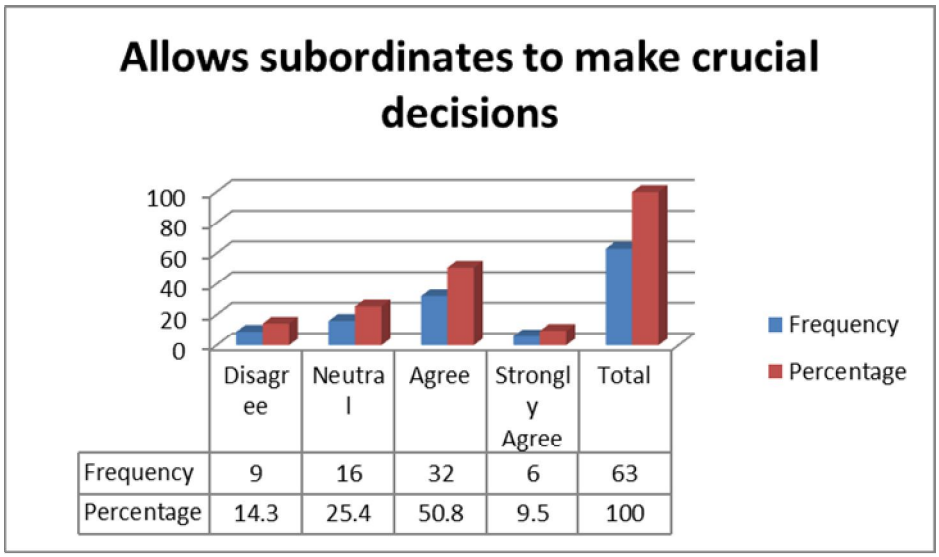
Source: Author's own construction

Figure 5.11 illustrates at the majority (92%) of the respondents agreed with the statement that an effective leader should trust the subordinates and delegate work to them, while 7.9% remained neutral. In a project there are different stakeholders who provide different specialised services. It is important for the project leader to clearly define the roles and responsibilities of the different stakeholders so that each individual in the project knows what is expected of them. It is impossible for a project leader to take on the responsibility of a structural engineer, while he is a mechanical engineer, for example, thus an effective project leader should be able to delegate tasks to his/her subordinates.

5.3.7 Allows subordinates to make crucial decisions

The intention of this question was to determine whether professionals who are involved in project management think that a project manager should allow subordinates to make crucial decisions in a project. The results of the study are shown in Figure 5.12 below.

Figure 5.12 – Allows subordinates to make crucial decisions



	Disagree	Neutral	Agree	Strongly Agree	Total
Frequency	9	16	32	6	63
Percentage	14.3	25.4	50.8	9.5	100

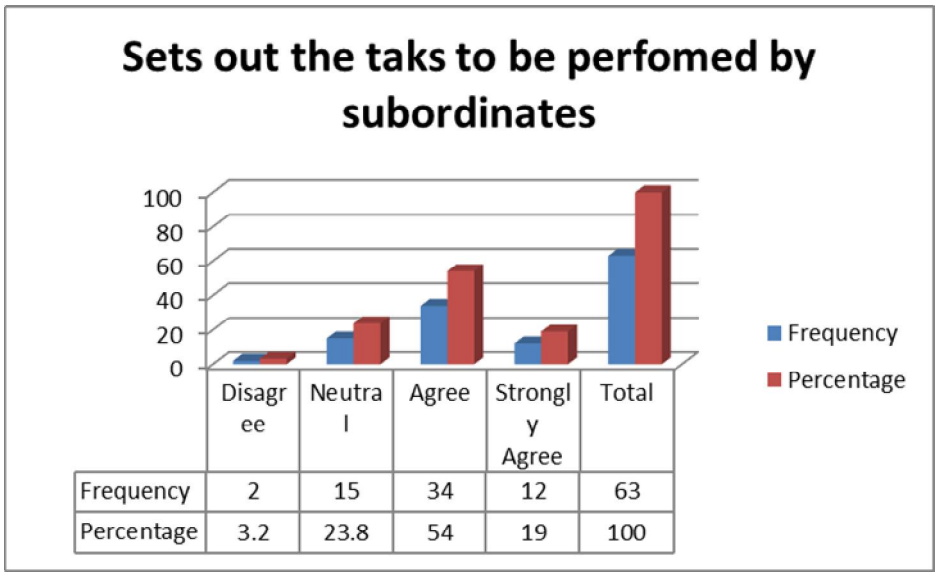
Source: Author's own construction.

Figure 5.12 shows that 60.3% of the respondents agreed that an effective project leader should allow subordinates to make crucial decisions while 25.4% were neutral towards the matter, and 14.3% disagreed with the statement. As shown in Figure 5.11, allowing subordinates to make crucial decisions is key to the successful delivery of the project. A good leader trusts his/her team members and deals with team members who under-perform. If the project manager trusts his/her subordinates to make crucial decisions, the project will run smoothly and everyone will feel that they are an important part of the team. A project manager should surround him/herself with competent professionals in order to avoid problems of trust, and decisions will be made timeously, hence there will be fewer/no delays owing to decision making.

5.3.8 Sets out tasks to be performed by subordinates

The intention of this question was to determine whether professionals who are involved in project management think that a project manager should set out tasks that should be performed by his/her subordinates in a project. The results of the study are shown in Figure 5.13 below.

Figure 5.13 – Sets out tasks to be performed by subordinates



	Disagree	Neutral	Agree	Strongly Agree	Total
Frequency	2	15	34	12	63
Percentage	3.2	23.8	54	19	100

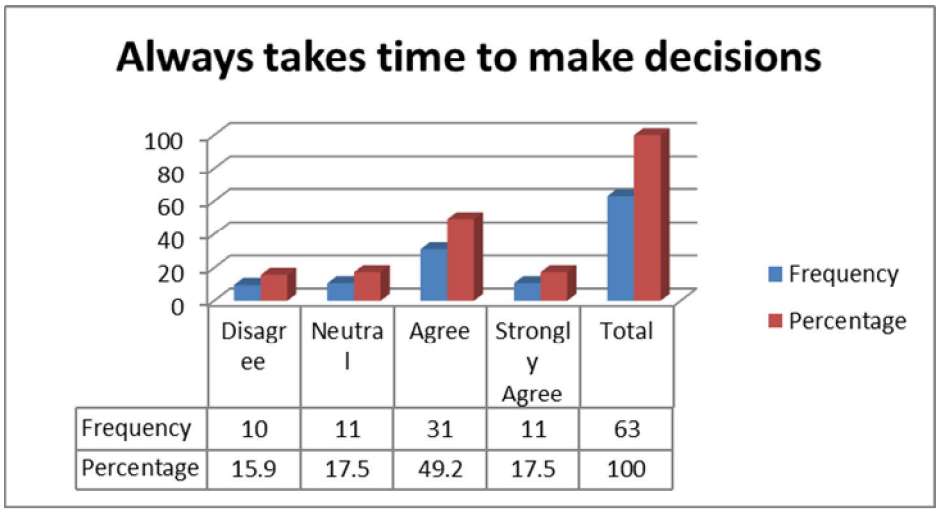
Source: Author's own construction

A majority of the respondents (63%) in Figure 5.13 agreed that an effective leader sets out tasks to be performed by subordinates while 23.8% were neutral and 3.2% disagreed. It is crucial that a project leader should clearly define the scope, responsibilities and deliverables for each project stakeholder at the beginning of the project when compiling a project charter. The Project Management Book of Knowledge also emphasizes the importance of establishing a project charter at the beginning of a project. The entire project team is responsible for identifying tasks that should be performed, and it is the project manager's responsibility to make sure that each project team member knows what should be delivered by when. It is critical that there should be a request for an information (RFI) schedule, which indicates the deadlines and person responsible. The RFI schedule will assist to track the completion of tasks and it is a good communication tool, which should be circulated to everyone in the team.

5.3.9 Always takes time to make decisions

The intention of this question was to determine whether professionals who are involved in project management think that a project manager should take time to make decisions. The results of the study are shown in Figure 5.14 below.

Figure 5.14 – Always takes time to make decisions



	Disagree	Neutral	Agree	Strongly Agree	Total
Frequency	10	11	31	11	63
Percentage	15.9	17.5	49.2	17.5	100

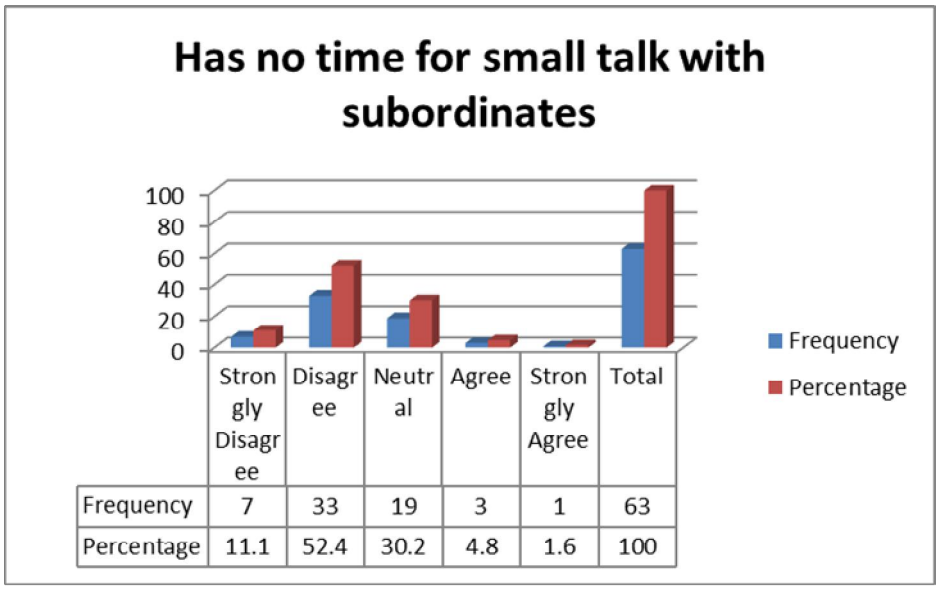
Source: Author's own construction

A majority of the respondents (66.7%) agreed with the statement that an effective project leader always takes time to make decisions, while 17.5% remained neutral and 15.9% disagreed. A good project leader should make informed decisions, which might sometimes mean that he/she should liaise with the specialist that is affected by the matter where a decision should be made. It is not always advisable for a project leader to make hasty decisions on items that require a specialist consultant, however, he/she can make decisions about items where he/she is a specialist. Thus, it is crucial that the project leader should surround him/herself with competent project team members.

5.3.10 Has no time for small talk with subordinates

The intention of this question was to determine whether a project leader should not make time for small talk with his/her subordinates in a project. The results of the study are shown in Figure 5.15 below.

Figure 5.15 – Has no time for small talk with subordinates



	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total
Frequency	7	33	19	3	1	63
Percentage	11.1	52.4	30.2	4.8	1.6	100

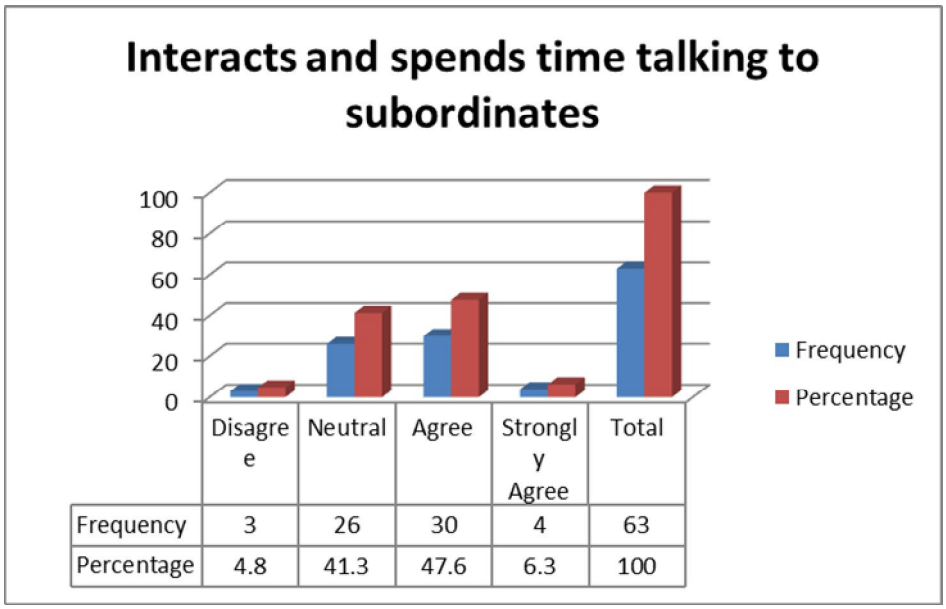
Source: Author's own construction

Figure 5.15 illustrates that 63.5% of the respondents disagreed because they believe that an effective project leader should make time for small talk with subordinates. A total of 6.4% of the respondents agreed with the statement, while 30.2% remained neutral. An effective project leader should make time for social and not personal conversations with subordinates so that the gap between management and staff can be bridged. A good project leader applies the principles of Ubuntu where he/she understands that he/she is nothing without his/her team, and that he/she is as good as his/her team, hence it is crucial for the success of the project that a project leader should make time for small talk with his/her subordinates.

5.3.11 Interacts and spends time talking to subordinates

The intention of this question was to determine whether a project leader should spend time interacting with subordinates. Interacting with subordinates may be an indication of extroversion and ability to create interpersonal relationships, which may reduce the gap. Jowah (2013:302) asserts that extroverts are most likely to work well with people, as they have time to listen to people's problems. Smit and Cronje (1997:337) concur with this finding and suggest that management by walking around (MBWA) is an effective tool, which promotes communication between managers and subordinates, thereby providing an open door policy for the subordinates. The results of the study are shown in Figure 5.16 below.

Figure 5.16 – Interacts and spends time talking to subordinates.



	Disagree	Neutral	Agree	Strongly Agree	Total
Frequency	3	26	30	4	63
Percentage	4.8	41.3	47.6	6.3	100

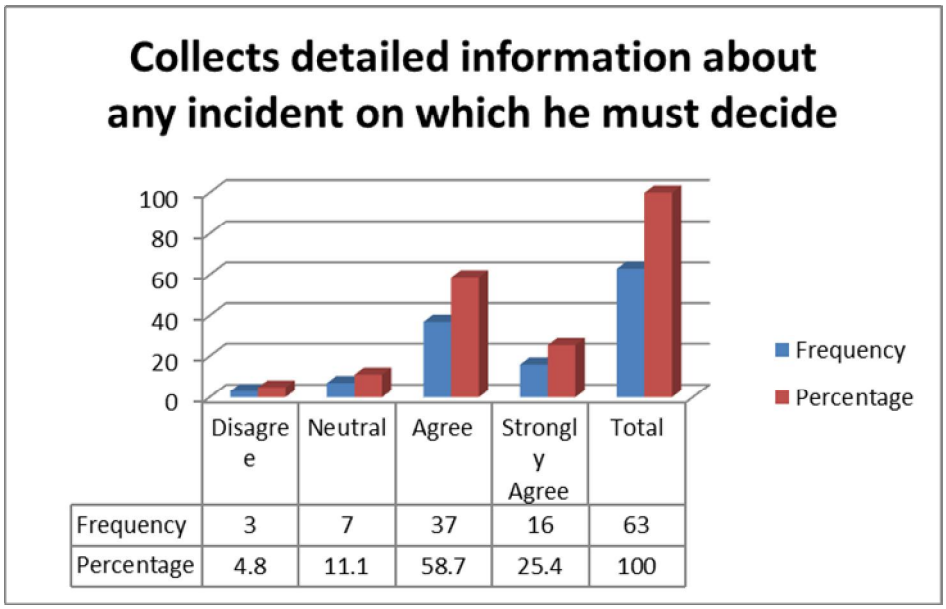
Source: Author's own construction

A majority of the respondents (53.9%) in Figure 5.16 agreed that an effective leader should interact and engage in conversations with his/her subordinates, while 41.3% remained neutral and 4.8% disagreed. As in Figure 5.15, it is crucial that the project leader should make time for subordinates, and by doing this he/she can also get their buy in. A good project leader applies the principles of Ubuntu where he/she understands that he/she is nothing without his/her team and he/she is as good as his/her team, hence it is crucial for the success of the project that a project leader should make time for small talk with his/her subordinates.

5.3.12 Collects detailed information about any incident that he must decide upon

The intention of this question was to determine whether a project leader should obtain detailed information about incidents that he/she is required to make decisions on. The responses are illustrated in Figure 5.17 below.

Figure 5.17 – Collects detailed information about any incident that he must decide upon.



	Disagree	Neutral	Agree	Strongly Agree	Total
Frequency	3	7	37	16	63
Percentage	4.8	11.1	58.7	25.4	100

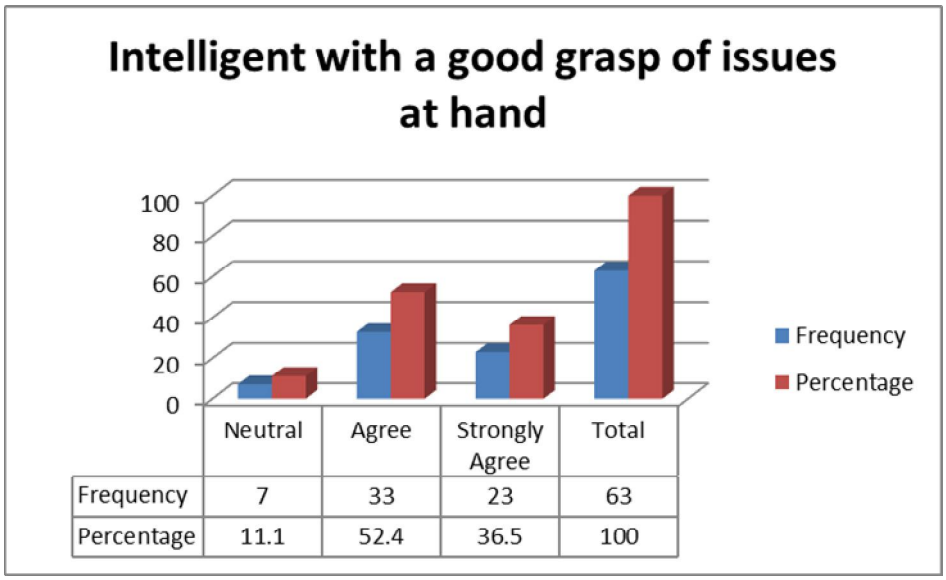
Source: Author's own construction

Figure 5.17 shows that the majority (84.1%) of respondents agreed that it is crucial for an effective project leader to obtain detailed information about incidents which he/she must decide upon, while 11.1% of the respondents remained neutral on the matter, and 4.8% disagreed. When it comes to making decisions it is critical that an effective leader should make the correct decision, especially if the decision has time, quality and cost implications. With all decision making, the project manager should consider the trade-offs between the project triangle (time, cost and quality). Thus, it can be concluded that it is important for a project manager to obtain detailed information about any incident in which he/she is expected to make a decision.

5.3.13 Intelligent with a good grasp of issues at hand

The intention of this question was to determine whether a project leader should be intelligent, and have a good grasp of issues at hand. The results are shown in Figure 5.18 below.

Figure 5.18 – Intelligent with a good grasp of issues at hand



	Neutral	Agree	Strongly Agree	Total
Frequency	7	33	23	63
Percentage	11.1	52.4	36.5	100

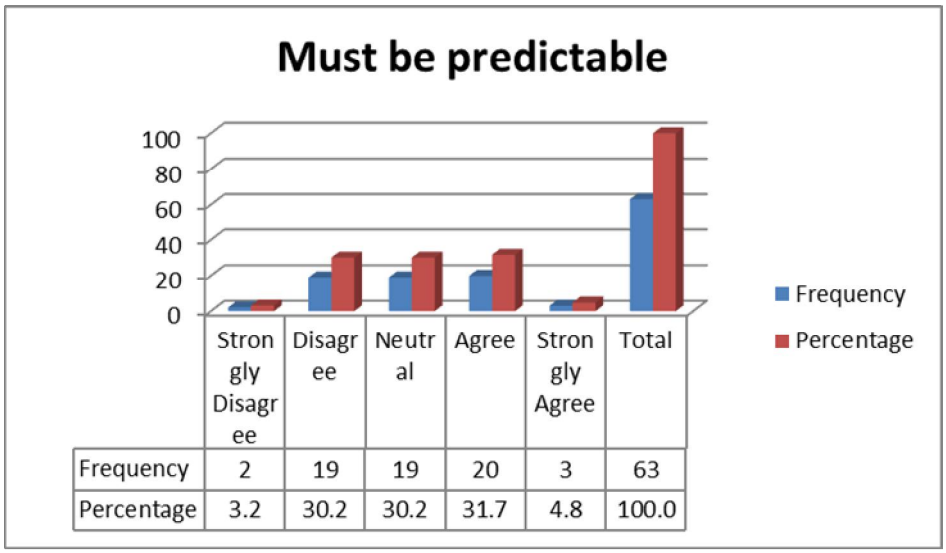
Source: Author's own construction

Figure 5.18 shows that 88.9% of the respondents agreed that an effective project leader should be someone who is intelligent and has a good grasp of issues at hand, while 11.1% of the respondents remained neutral on the matter. Effective project leaders should have a high level of intelligence because they are the captain of the project and the way that they conduct themselves will affect the rest of the project team. The project leader should have a level of technical ability because most of the issues that will arise will be of a technical nature.

5.3.14 Must be predictable

The intention of this question was to determine whether a project leader should be someone who is predictable. The results are shown in Figure 5.19 below.

Figure 5.19 – Must be predictable.



	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total
Frequency	2	19	19	20	3	63
Percentage	3.2	30.2	30.2	31.7	4.8	100.0

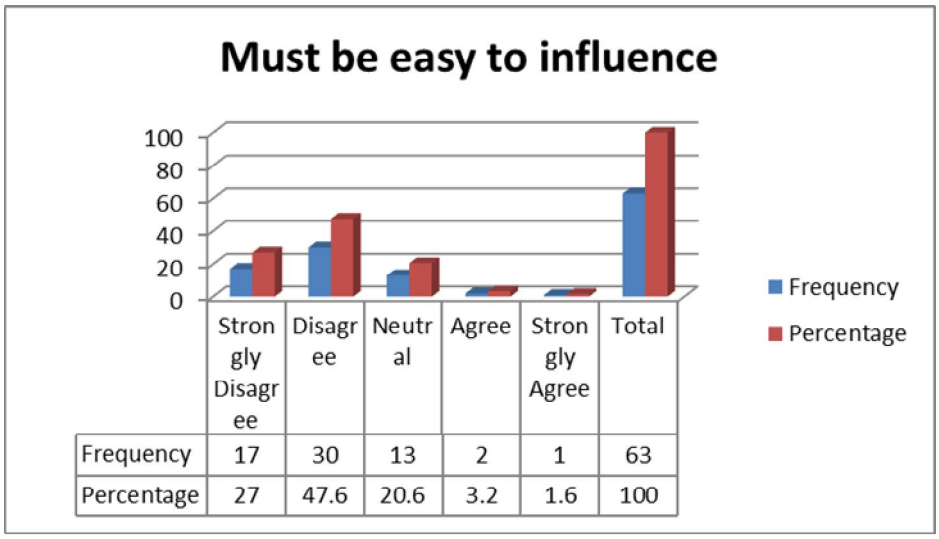
Source: Author's own construction

A total of 33.4% of the respondents as shown in Figure 5.19 above believe that an effective leader should not be predictable, while the majority at 36.5% agree that he/she must be predictable, and 30.2% remained neutral. A project leader should have a level of predictability so that the project team members can know what to expect, and not worry about what to expect next when it comes to project delivery. By them knowing what the project manager expects, they will be able to make sure that they achieve their deadlines or set milestones.

5.3.15 Must be easily influenced

The intention of this question was to determine whether a project leader should be someone who is easily influenced. The results for this question are shown below in Figure 5.20.

Figure 5.20 – Must be easily influenced.



	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total
Frequency	17	30	13	2	1	63
Percentage	27	47.6	20.6	3.2	1.6	100

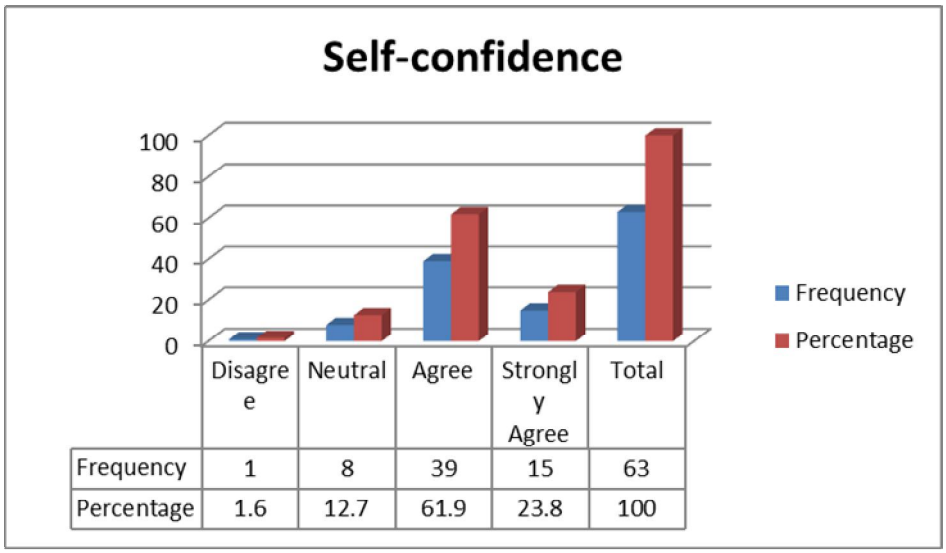
Source: Author's own construction

A majority of the respondents in Figure 5.20 (74.6%) did not agree that an effective leader should be easy to influence, while 20.6% remained neutral and 4.8% believed that he/she must be easy to influence. An effective project manager should not be easily influenced because there are different kinds of influence within a project environment. Some project members might have personal agendas, thus a project manager should always keep an open mind and have the best interest of the project at heart and not be easily influenced.

5.3.16 Self-confidence

The purpose of this question was to determine whether a project leader should be an individual who is confident about him/herself. The results for this question are shown below in figure 5.21.

Figure 5.21 – Self-confident



	Disagree	Neutral	Agree	Strongly Agree	Total
Frequency	1	8	39	15	63
Percentage	1.6	12.7	61.9	23.8	100

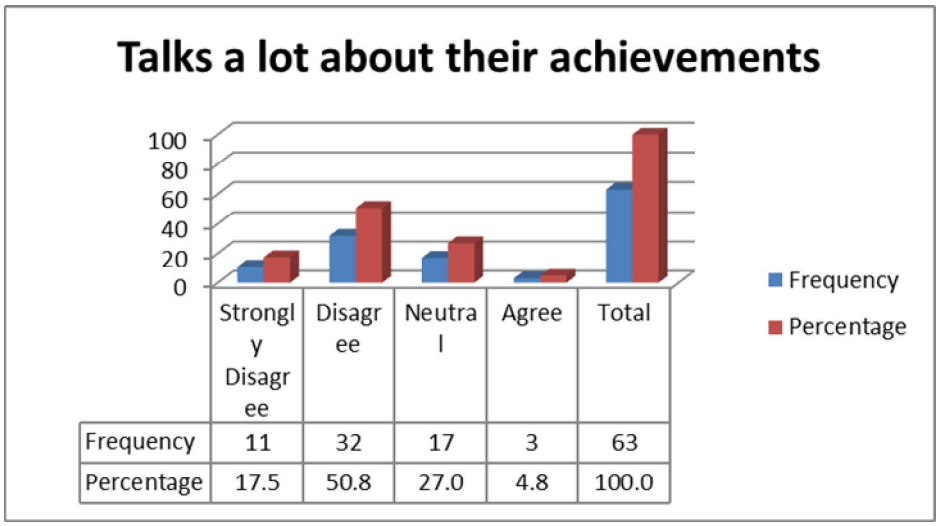
Source: Author's own construction

Figure 5.21 shows that 85.7% of the respondents agreed that an effective project leader should be self-confident, while 12.7% remained neutral and a minority of 1.6% believed that an effective project leader should not be self-confident. Project team members take their cues from the project leader. If the project leader is not confident and is unsure of him/herself then it will not be easy for the project team member to have confidence in him/her. The project leaders' self-confidence is one of the critical factors that contribute to successful project delivery. It can be concluded from the study that project leaders should be self-confident. Confidence is one of the most important characteristics of an effective leader.

5.3.17 Talks a lot about their achievements

The purpose of this question was to determine whether a project leader should talk a lot about his/her achievements. The results for this question are shown below in Figure 5.22.

Figure 5.22 – Talks a lot about their achievements



	Strongly Disagree	Disagree	Neutral	Agree	Total
Frequency	11	32	17	3	63
Percentage	17.5	50.8	27.0	4.8	100.0

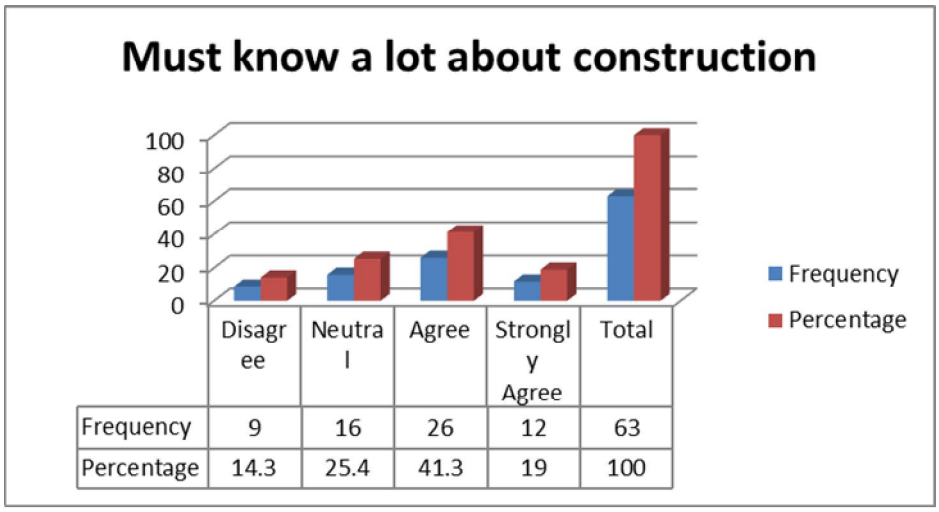
Source: Author's own construction

A majority (68.3%) of the respondents, as shown in figure 5.22 did not agree that an effective leader should talk a lot about their achievements, while 27% were neutral and a minority of 4.8% agreed. For project leaders to talk about their achievements to their subordinates might seem as though they are showing off and project team members might be discouraged. Instead, an effective leader should redirect attention to the subordinates to keep them motivated and wanting to achieve more. From the study it can be concluded that an effective leader should not be giving themselves praise by talking about their achievements, because this will cause team members to have a negative perception of the leader, which will affect delivery. It is important for project team members to have a positive attitude about their leader and the project.

5.3.18 Must know a lot about construction

The intention of this question was to determine whether a project leader should be someone who knows a lot about construction, since they manage construction projects. The results for this question are shown below in Figure 5.23.

Figure 5.23 – Must know a lot about construction.



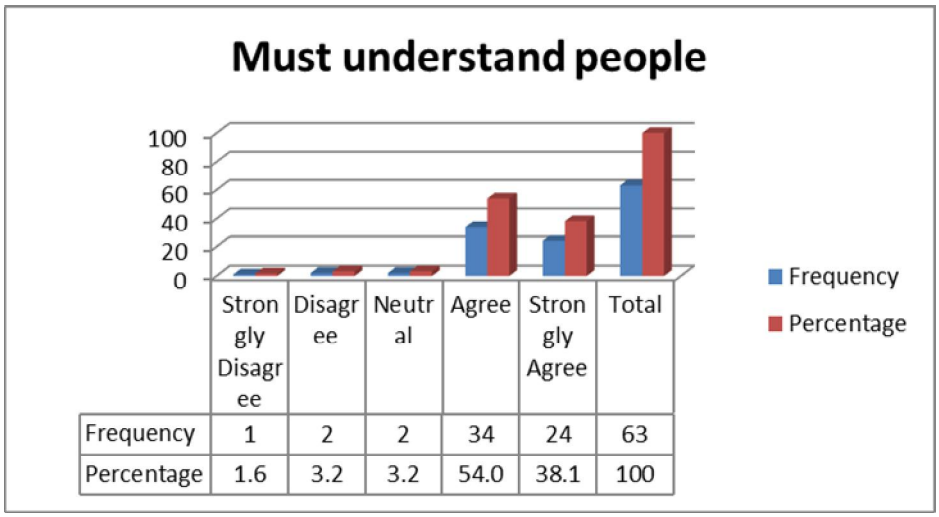
Source: Author's own construction

A total of 60.3% of the respondents, as shown in Figure 5.23 above agreed that an effective project leader must know a lot about construction, while 25.4% were neutral on the matter and a minority of 14.3% did not agree. It is critical that a project leader should have a technical background in the construction industry, because there is certain jargon that is used in the construction industry. There are also technical elements that will need the input of the project leader hence the importance of a technical background. It can be concluded from the results in Figure 5.23 that a project manager in the construction industry should have a fair level of education about construction.

5.3.19 Must understand people

The intention of this question was to determine whether a project leader should be someone who understands people in order to deliver successful projects. The results of the survey are shown in Figure 5.24 below.

Figure 5.24 – Must understand people



	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total
Frequency	1	2	2	34	24	63
Percentage	1.6	3.2	3.2	54.0	38.1	100

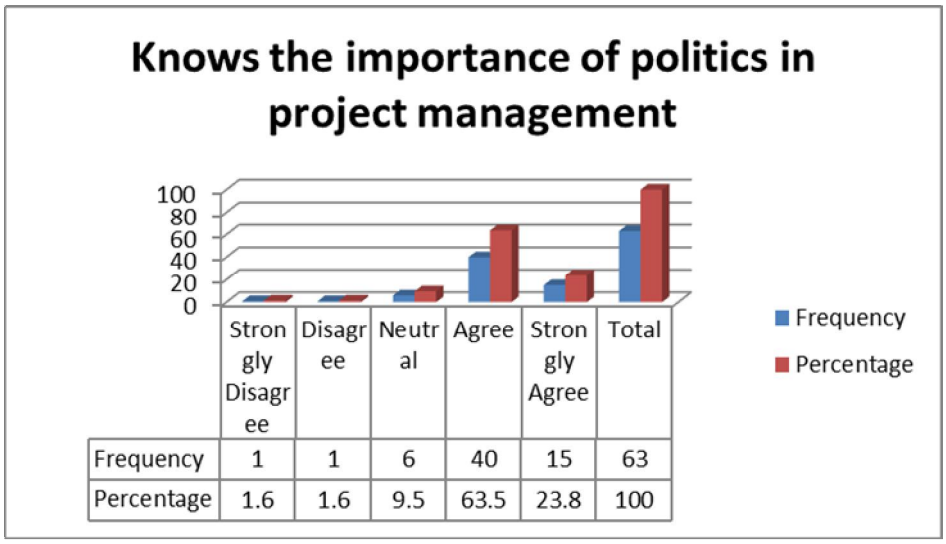
Source: Author's own construction

Figure 5.24 illustrates that 92.1% of the respondents agreed that the project leader must understand people, while 4.8% disagreed and 3.2% remained neutral. Leadership is about people because you are leading people. For one to lead people, one should understand people. Different project stakeholders have different personalities that bring different contributions to the project, hence it is critical for an effective project leader to understand people. The conclusion from the results in Figure 5.24 is that an effective project leader is an individual who understands people.

5.3.20 Knows the importance of politics in project management

The intention of this question was to determine whether a project leader should know the importance of politics in project management. The results of the survey are shown in Figure 5.25 below.

Figure 5.25 – Knows the importance of politics in project management



	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total
Frequency	1	1	6	40	15	63
Percentage	1.6	1.6	9.5	63.5	23.8	100

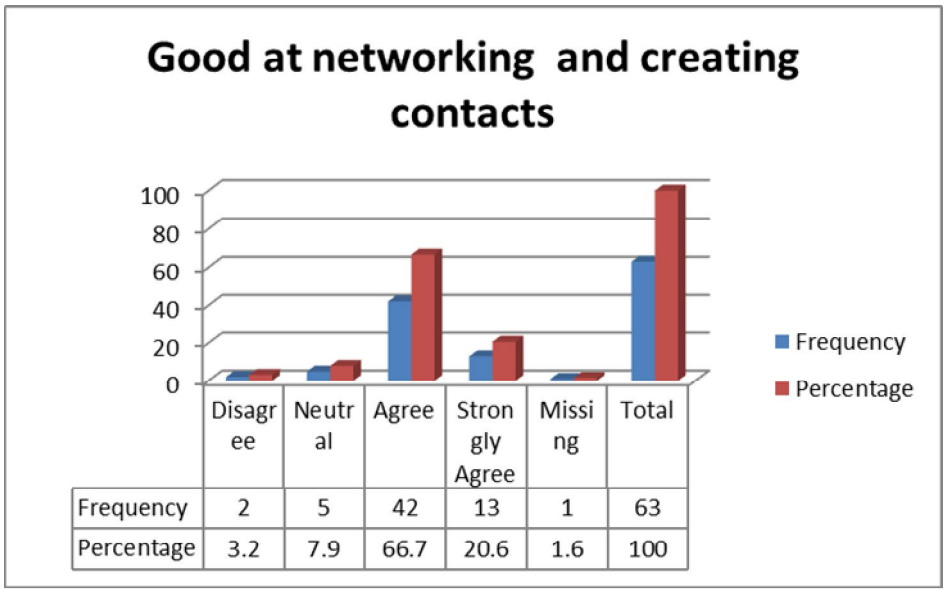
Source: Author's own construction

Figure 5.25 illustrates that 87.3% of the respondents agreed that an effective project leader should be cognisant of the importance of politics in project management, while 9.5% were neutral and 3.2% disagreed. Politics plays an important role in project management, and it can be internal project politics or it can be politics from the project sponsor's side. The project manager should have a plan of action to combat any kind of issues that might be as a result of politics in a project. It is equally important that he/she includes politics as part of the project risk assessment when conducting the assessment. This will assist to combat unforeseen political influence at any stage of the project.

5.3.21 Good at networking and creating contacts

The intention of this question was to determine whether a project leader should be good at creating contacts and should be a good networker. The results of the survey are shown in Figure 5.26 below.

Figure 5.26 – Good at networking and creating contacts.



	Disagree	Neutral	Agree	Strongly Agree	Missing	Total
Frequency	2	5	42	13	1	63
Percentage	3.2	7.9	66.7	20.6	1.6	100

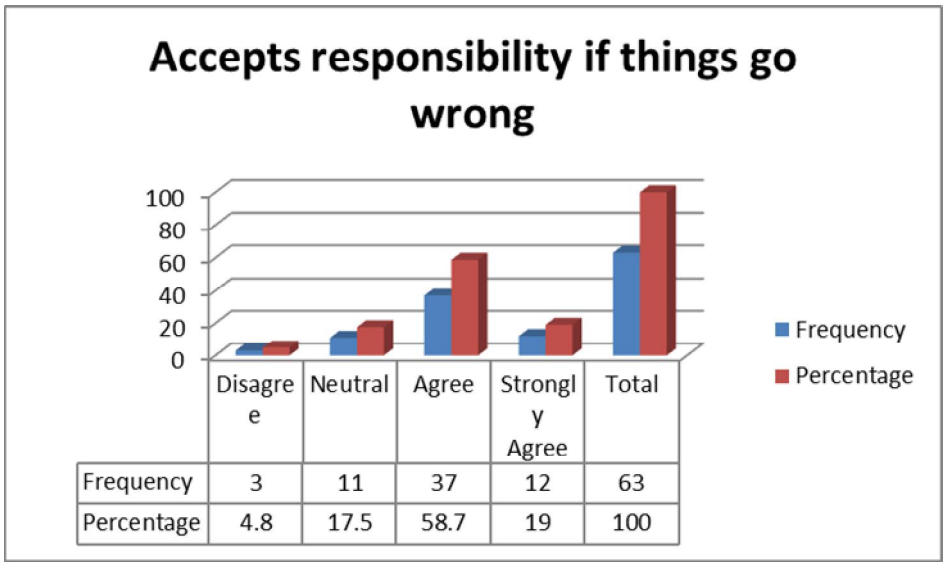
Source: Author's own construction

Figure 5.26 elucidates that 87.3% of the respondents agreed that an effective project leader should be good at networking and at creating contacts, while 7.9% were neutral and 3.2% disagreed. A total of 1.6% of the respondents did not provide their input. A project leader is as good as its people and also as good his/her network in terms of obtaining more work from clients. A combination of good contacts and a good team leads to a successful project leader.

5.3.22 Accepts responsibility if things go wrong

The intention of this question was to determine whether a project leader must take blame when things go wrong in a project that he/she heads. Below are the results of the question shown in Figure 5.27.

Figure 5.27 – Accepts responsibility if things go wrong.



	Disagree	Neutral	Agree	Strongly Agree	Total
Frequency	3	11	37	12	63
Percentage	4.8	17.5	58.7	19	100

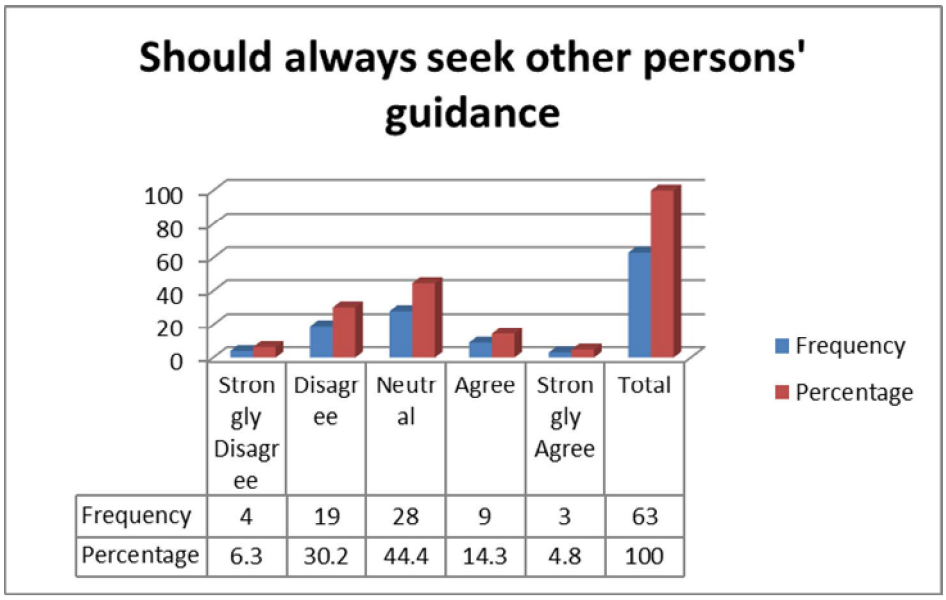
Source: Author's own construction

The results of the study in Figure 5.27 show that 75.7% of the respondents agreed that an effective leader should take responsibility if things go wrong, while 17.5% were neutral and 4.8% did not agree. The project leader should always follow the correct project management procedures by making sure that all documents such as the project charter, communication channel, and so on are in place and monitors the project team, and reports and deals with any issues that arise. If all these are followed correctly and the project still fails, then he/she should assume responsibility, should the project fail.

5.3.23 Should always seek other peoples' guidance

The intention of this question was to determine whether a project leader should always seek other peoples' guidance before making decisions and running with the project. The results of the survey are shown in Figure 5.28 below.

Figure 5.28 – Should always seek other persons' guidance.



	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total
Frequency	4	19	28	9	3	63
Percentage	6.3	30.2	44.4	14.3	4.8	100

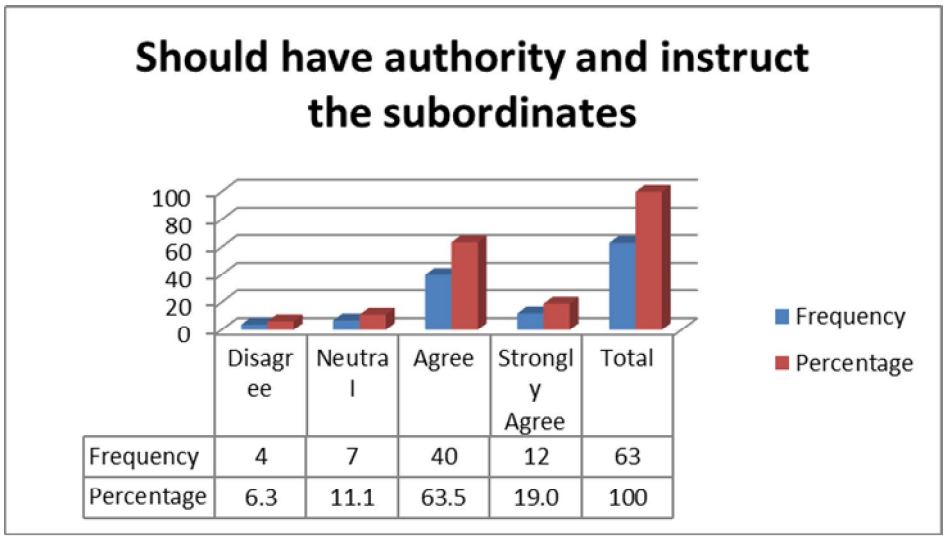
Source: Author's own construction

The results in Figure 5.28 indicate that a majority of the respondents (44.4%) were neutral on the matter and 36.5% disagreed that a project leader should seek other peoples' guidance, while 19.1% agreed. A majority of the respondents were indecisive; this might be an indication that they did not understand the question well. When a project leader is required to make a decision on a matter where there is specialist consultant employed on the project, he/she should seek guidance and input from the respective specialist. He/she should make informed decisions and should utilise the strengths of his/her team.

5.3.24 Should have authority and instruct subordinates

The intention of this question was to determine whether a project leader should have authority and instruct subordinates. The results for this question are shown in Figure 5.29 below.

Figure 5.29 – Should have authority and instruct subordinates.



	Disagree	Neutral	Agree	Strongly Agree	Total
Frequency	4	7	40	12	63
Percentage	6.3	11.1	63.5	19.0	100

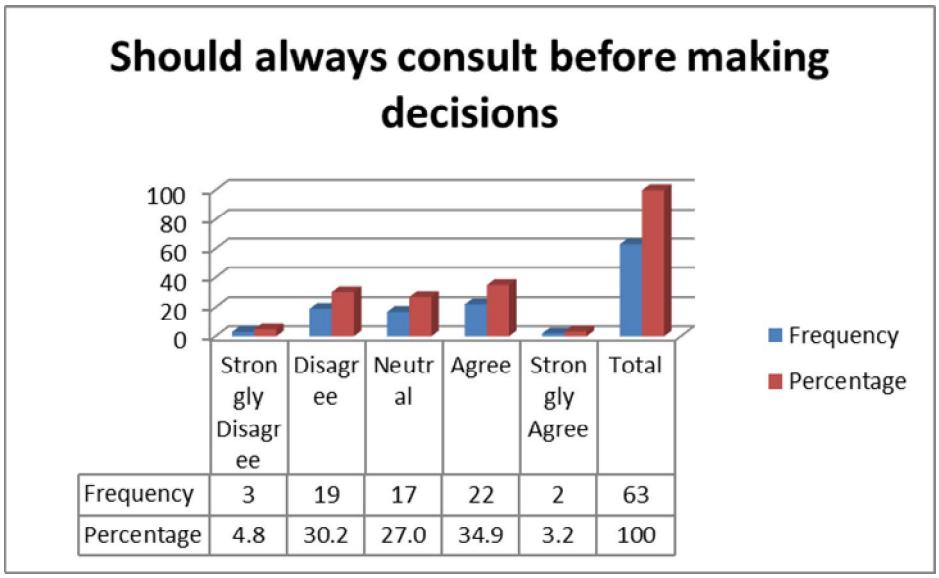
Source: Author's own construction

It can be seen from Figure 5.29 that 82.5% of the respondents agreed that an effective project leader should have authority and should instruct his/her subordinates, while 11.1% were neutral and a minority of 6.3% disagreed. An effective project leader is someone who is able to delegate work to his/her subordinates and get the job done as a team, and should have the respect of his/her team members. From the results shown in Figure 5.29 it can be concluded that an effective project leader should have authority and should instruct the subordinates. There should not be any questions about his/her authority, which means that there should not be any authority gap because the subordinates should know that the project leader has full authority and hence respect this. The authority gap might create a level of insubordination on the part of the subordinates.

5.3.25 Should always consult before making decisions

The intention of this question was to determine whether a project leader should always consult before making decisions. The results for this question are shown in Figure 5.30.

Figure 5.30 – Should always consult before making decisions



	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total
Frequency	3	19	17	22	2	63
Percentage	4.8	30.2	27.0	34.9	3.2	100

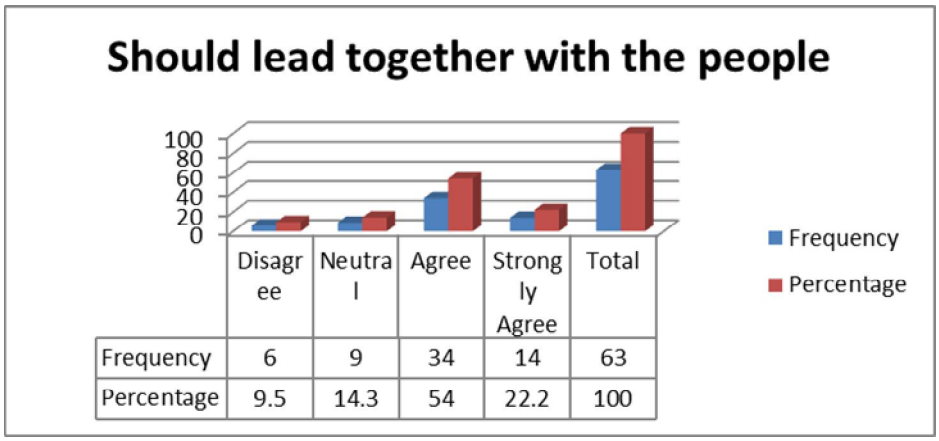
Source: Author's own construction

The results in Figure 5.30 illustrate that 38.1% of the respondents agreed that an effective project leader should consult before making decisions while 35% disagreed and 27% remained neutral on the matter. It is critical that the project leader should consult with relevant project members before making decisions that affect them. This will assist the project leader to make better and more informed decisions. It is critical for a project leader to surround him/herself with competent professionals so that he/she can make informed decisions.

5.3.26 Should lead together with the people

The intention of this question was to determine whether an effective project leader is one that leads together with the people. The results for this question are shown in Figure 5.31.

Figure 5.31 – Should lead together with the people



	Disagree	Neutral	Agree	Strongly Agree	Total
Frequency	6	9	34	14	63
Percentage	9.5	14.3	54	22.2	100

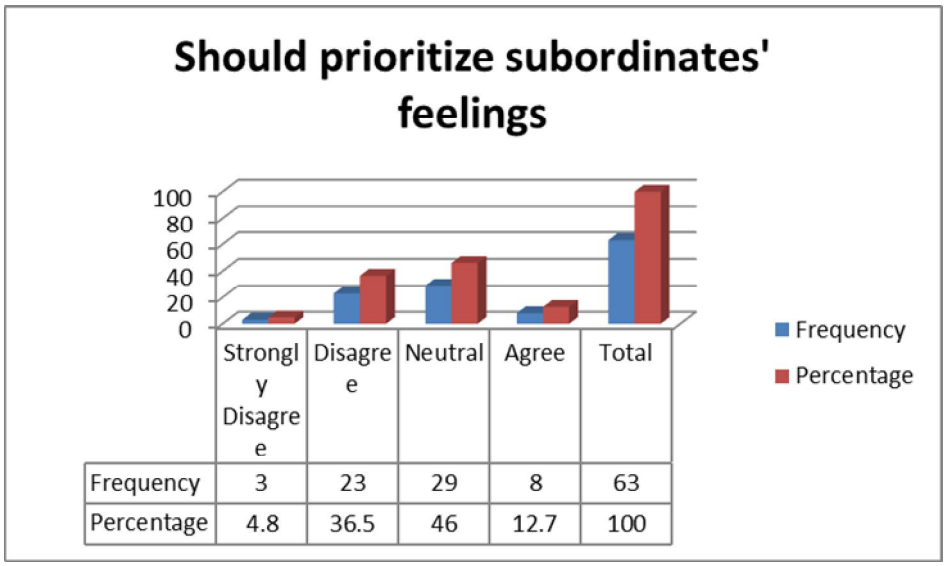
Source: Author's own creation

From figure 5.31 it can be seen that 76.2% of the respondents believed that an effective leader should lead together with the people, while 14.3% were neutral and 9.5% did not agree. It is critical for the project leader to allow his/her project team members to lead their respective disciplines/trades. This will give the project team a feeling of ownership, and thus make them more accountable for their services. As can be seen from the results, it is critical that the project leader should lead with the people.

5.3.27 Should prioritize subordinates' feelings

The intention of this question was to determine whether an effective project leader should prioritize subordinates' feelings. The results for this question are shown in Figure 5.32 below.

Figure 5.32 – Should prioritize subordinates' feelings.



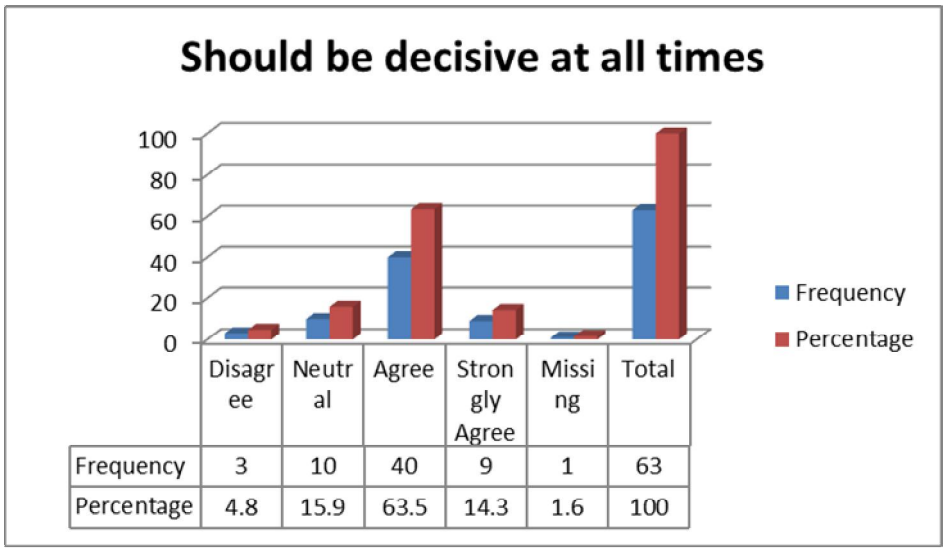
Source: Author's own construction

From Figure 5.32 it can be seen that 46% of the respondents remained neutral on the matter while 41.3% believed that an effective project leader should not prioritize subordinates' feelings and 12.7% agreed that an effective project leader should prioritize subordinates' feelings. An effective project leader knows how to judge a situation and make better and more informed decisions, and he/she should be able to determine and prioritize when it comes to project deliverables vs. subordinates' feelings.

5.3.28 Should be decisive at all times

The intention of this question was to determine whether a project leader should be decisive at all times. Below are the results of the question shown in Figure 5.33.

Figure 5.33 – Should be decisive at all times.



	Disagree	Neutral	Agree	Strongly Agree	Missing	Total
Frequency	3	10	40	9	1	63
Percentage	4.8	15.9	63.5	14.3	1.6	100

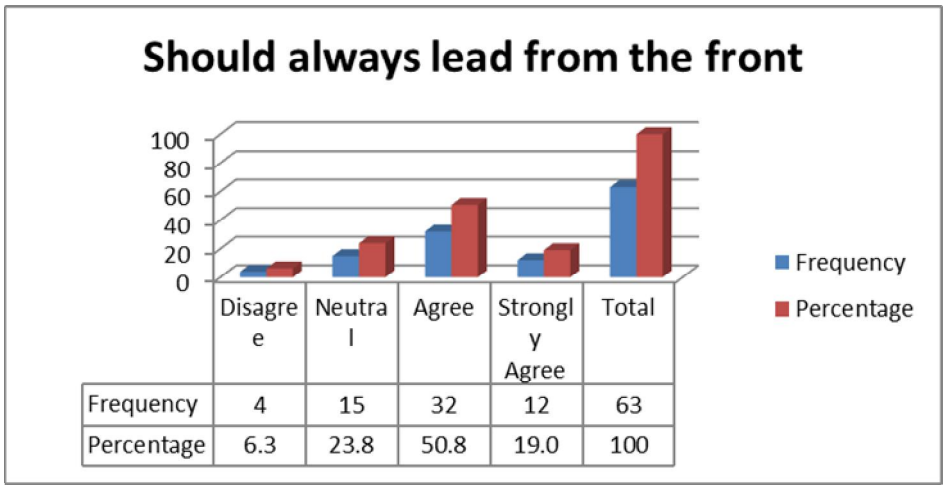
Source: Author's own construction

A majority of the respondents in Figure 5.33, namely 77.8% agreed that an effective project leader should be decisive at all times, while 15.9% remained neutral and 4.8% did not agree. A total of 1.6% of the respondents did not respond to the question. It is pivotal that a lack of decisiveness does not affect project delivery. The project leader should make informed decisions by involving the necessary team members, and take into account the implications of the decision on the project triangle. It can thus be concluded from the results and the supporting statements that an effective project leader should always be decisive at all times.

5.3.29 Should always lead from the front

The intention of this question was to determine whether a project leader should always lead from the front. The results of the question are shown below in Figure 5.34.

Figure 5.34 – Should always lead from the front



	Disagree	Neutral	Agree	Strongly Agree	Total
Frequency	4	15	32	12	63
Percentage	6.3	23.8	50.8	19.0	100

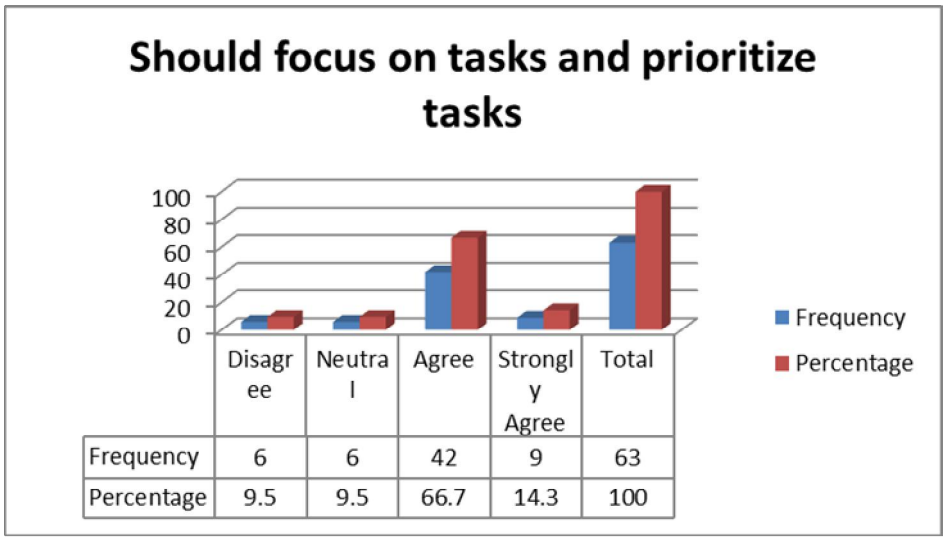
Source: Author's own construction

The results in Figure 5.34 illustrate that 69.8% of the respondents believed that an effective leader should always lead from the front while 23.8% were indecisive and 6.3% disagreed. It is important for a project leader to always lead from the front so that he/she can indicate the direction in which the project should go, thus leading the rest of the project team members. The conclusion gathered from the results is that an effective leader should lead from the front. Leading from the front also indicates a level of confidence for subordinates, which will make it easier for them to follow their leader.

5.3.30 Should focus on tasks and prioritize tasks

The intention of this question was to determine whether a project leader should focus on tasks and prioritize tasks. The results of the question are shown below in Figure 5.35.

Figure 5.35 – Should focus on tasks and prioritize tasks.



	Disagree	Neutral	Agree	Strongly Agree	Total
Frequency	6	6	42	9	63
Percentage	9.5	9.5	66.7	14.3	100

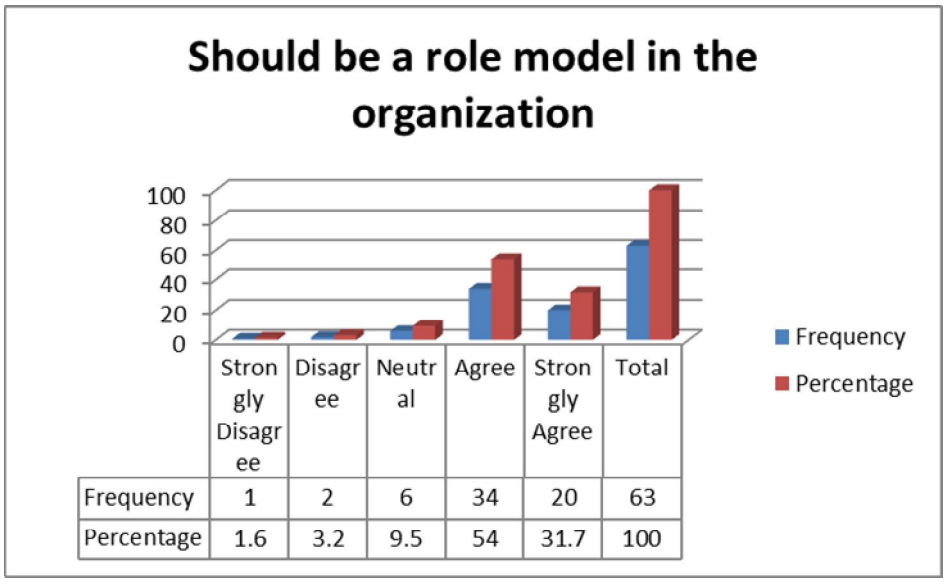
Source: Author's own construction

Figure 5.35 illustrates that 81% of the respondents believed that an effective project leader should focus on tasks and prioritize tasks, while 9.5% disagreed and another 9.5% remained neutral. Effective leaders know how to prioritize. They have a natural ability to realise what should be prioritized and when. They know how to prioritize tasks, while not neglecting team members feelings' and their main focus is delivering a succesfull project.

5.3.31 Should be a role model in the organization

The intention of this question was to determine whether a project leader should be a role model in the organization. The results of the question are shown below in Figure 5.36.

Figure 5.36 – Should be a role model in the organization.



	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total
Frequency	1	2	6	34	20	63
Percentage	1.6	3.2	9.5	54	31.7	100

Source: Author's own construction

A total of 85.7% of the respondents in Figure 5.36 believed that an effective project leader should be someone who is a role model in the organization, while 9.5% were neutral and 4.8% did not agree. It is crucial that the project leader should be someone who is respected and is a role model in the organization. It can be concluded, judging from the results in Figure 5.36, that an effective leader should be a role model in the organization. It is easier for people to buy into the vision and mission of someone who they consider to be a role model, since they already have confidence in him/her.

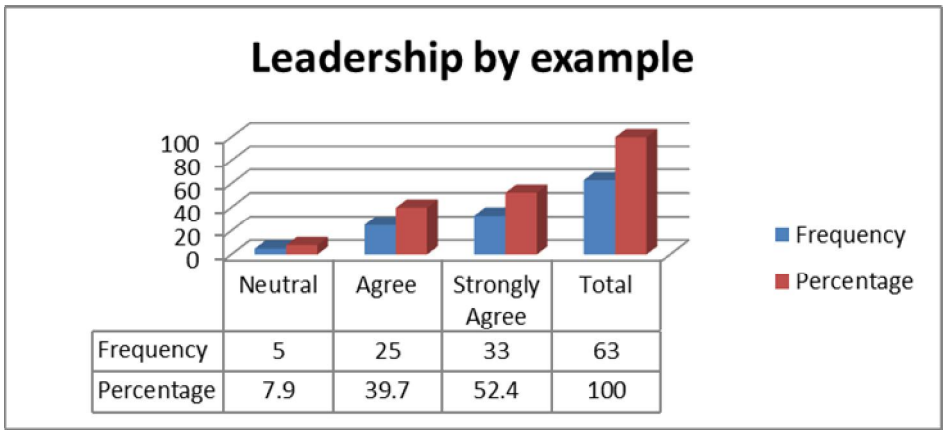
5.4 Section B – Characteristics of effective managers

This section presents and discusses the characteristics of effective managers. The respondents were required to rate the qualities of effective managers from pre-determined characteristics. The rating scale was between 1-5 with 1 being Strongly disagree, 2 – Disagree, 3 – Neutral, 4 – Agree, and 5 – Strongly agree.

5.4.1 Lead by example

The purpose of this question was to determine whether the respondents thought that an effective manager is an individual who leads by example.

Figure 5.37 – Lead by example



	Neutral	Agree	Strongly Agree	Total
Frequency	5	25	33	63
Percentage	7.9	39.7	52.4	100

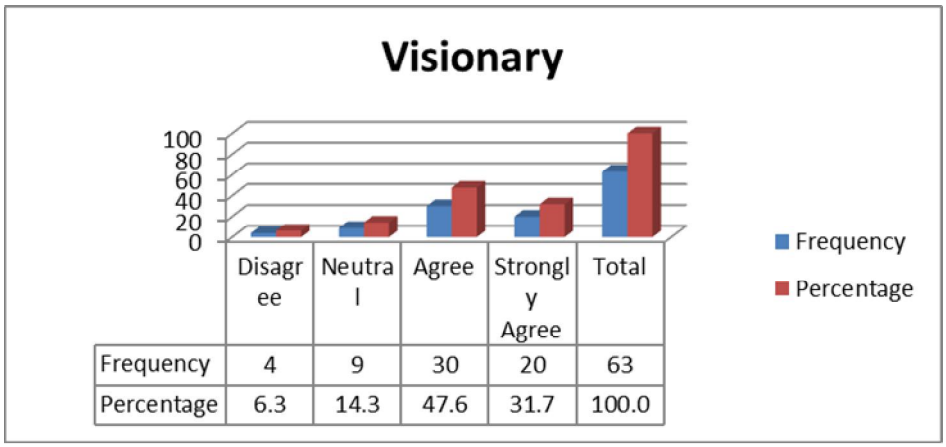
Source: Author's own construction

The results in Figure 5.37 show that a majority of the respondents (95.7%) agreed that an effective manager should lead by example, while 7.9% were neutral. Team members rely on the project manager to show them and direct and encourage them, thus it is imperative that an effective manager should be someone who is exemplary in this regard. It can also be concluded from the results that an effective manager should lead by example.

5.4.2 Visionary

The intention of this question was to determine whether an effective manager should be someone who is a visionary. The results of the question are shown below in Figure 5.38.

Figure 5.38 – Visionary



	Disagree	Neutral	Agree	Strongly Agree	Total
Frequency	4	9	30	20	63
Percentage	6.3	14.3	47.6	31.7	100.0

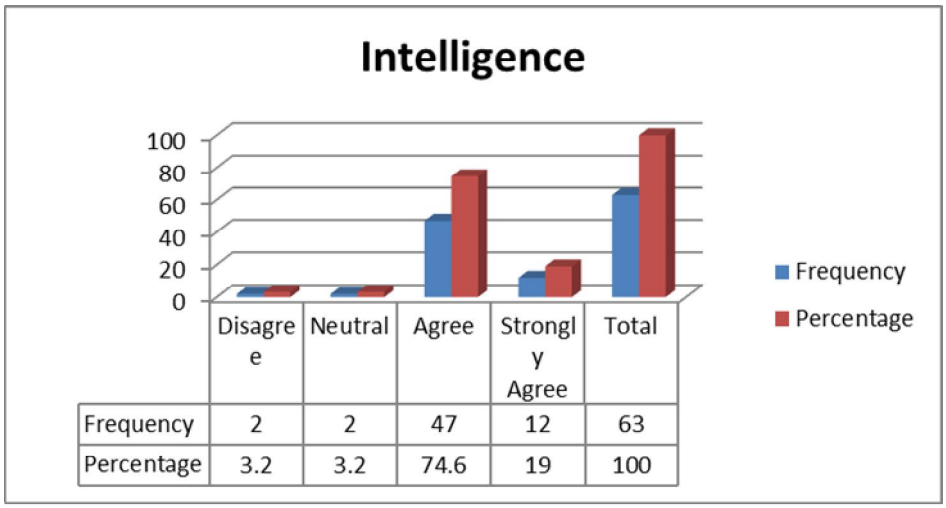
Source: Author's own construction

According to Figure 5.38, 79.3% of the respondents agreed that an effective manager should be a visionary, while 14.9% were neutral and 6.3% did not agree. An effective manager should have a vision and a mission and obtain buy in from the projects' team members, and combine the different elements in the project, namely soft and hard skills. It can also be concluded form the study that an effective manager should be a visionary.

5.4.3 Intelligence

The intention of this question was to determine whether intelligence is one of the characteristics of an effective manager. The results of the question are shown below in Figure 5.39.

Figure 5.39 – Intelligence



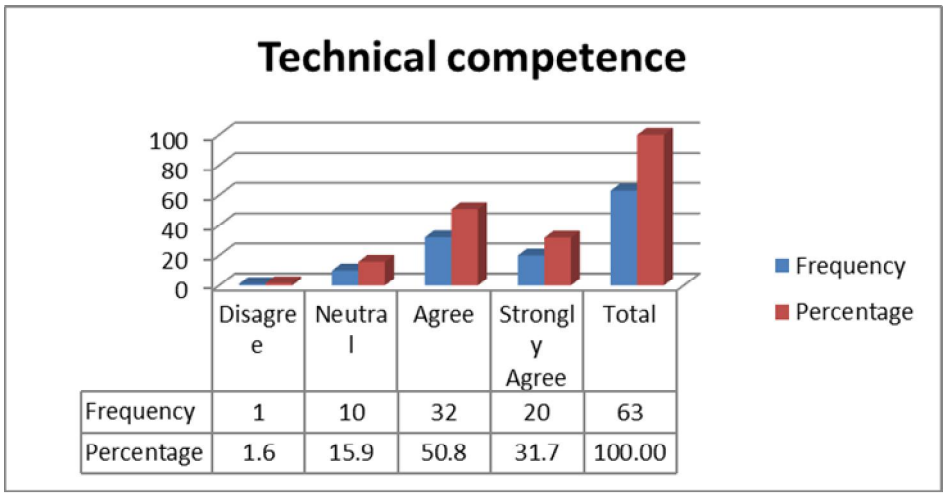
Source: Author's own construction

The results in Figure 5.39 shows that a majority of the respondents (93.6%) agreed that an effective manager should have intelligence, while 3.2% were neutral and 3.2% disagreed. Project managers should be both technically intelligent and emotionally intelligent. The emotional intelligence element is the most important, because the key job of a project manager is to manage people, and to manage people one should be emotionally intelligent. From the results in Figure 5.39 it can be concluded that intelligence is a characteristic of an effective manager.

5.4.4 Technical competence

The intention of this question was to determine whether technical competence is a characteristic of an effective manager. The results of the study are shown in Figure 5.40 below.

Figure 5.40 – Technical competence



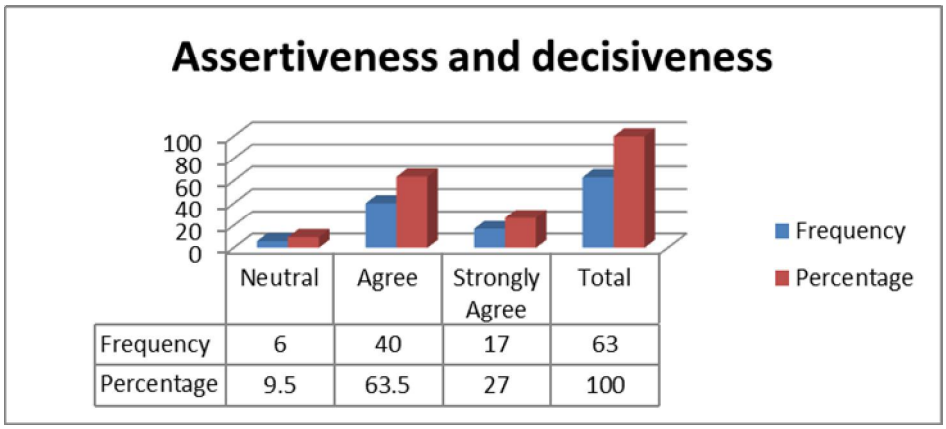
Source: Author's own construction

A majority of the respondents in Figure 5.40, namely 82.5% agreed that an effective manager should be technically competent in order to successfully deliver a project in the construction industry. A total of 15.9% of the respondents were neutral and a mere 1.6% minority did not believe that an effective manager should be technically competent. A project manager should have a good 'feel' of what the deliverables entail, and should also be aware of the processes to enable him/her to identify any risks that may be involved. Technical ability will also assist the project manager to gain the respect of the project team members, while he/she can also have input at technical meetings and be able to understand the associated costs in budget estimates.

5.4.5 Assertiveness and decisiveness

The intention of this question was to determine whether assertiveness and decisiveness are characteristics of an effective manager. The results of the study are shown in Figure 5.41 below.

Figure 5.41 – Assertiveness and decisiveness



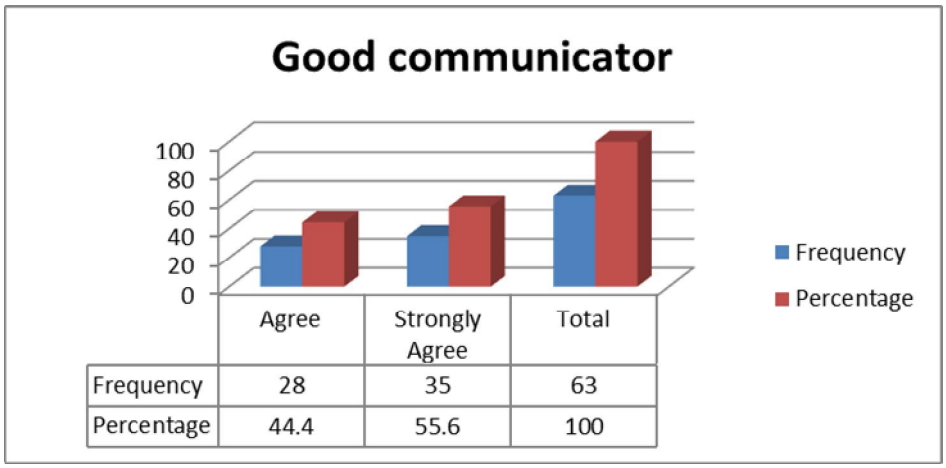
Source: Author's own construction

In Figure 5.41 above it can be seen that 90.5% of the respondents believed that an effective manager should be decisive and assertive, while a minority of 9.5% did not agree. Project managers should be clear and concise and have a clear idea of what they want to do or what the objectives are. They should always express their opinions and not worry about what others might think as long as it is in the best interest of the project with a level of emotional intelligence, because it is also imperative that one does not come across as being rude. It is also critical for an effective manager to always be decisive so that the project team members can also see this and not think that the project manager is confused or unsure. From the results in Figure 5.41 it can be concluded that an effective manager should be assertive and decisive, while it should be noted that assertiveness does not mean being rude.

5.4.6 Good communicator

The intention of this question was to determine whether being a good communicator is a characteristic of an effective manager. The results of the question are shown in Figure 5.42 below.

Figure 5.42 – Good communicator



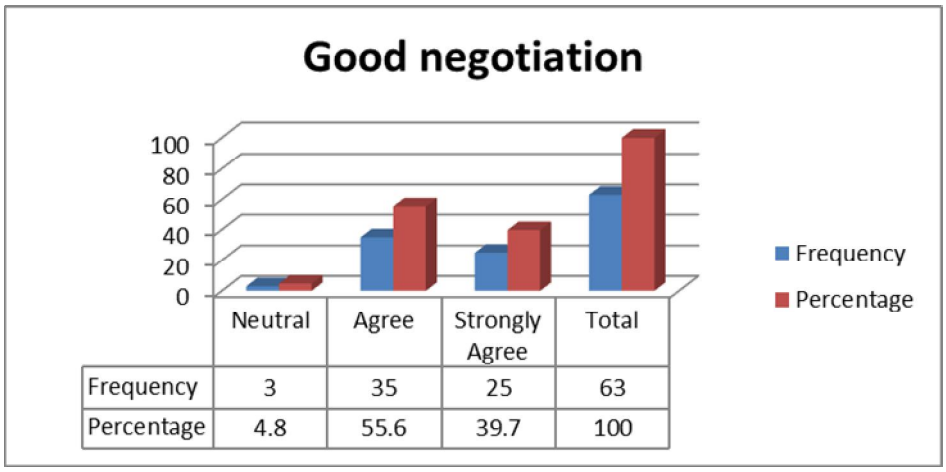
Source: Author's own construction

The results in Figure 5.42 illustrate that 100% of the respondents believed that an effective manager should be a good communicator. Communication in project management is not merely about talking and listening to the project stakeholders. Communication in project management also encompasses understanding the challenges of the project, understanding the team, and being approachable as a project manager. Communication and leadership are interlinked and the ability of the project manager to communicate effectively, vertically, is most important and contributes hugely to the success of a project.

5.4.7 Good negotiator

The intention of this question was to determine whether being a good negotiator is a characteristic of an effective manager. The results of the question are shown in Figure 5.43 below.

Figure 5.43 – Good negotiator



	Neutral	Agree	Strongly Agree	Total
Frequency	3	35	25	63
Percentage	4.8	55.6	39.7	100

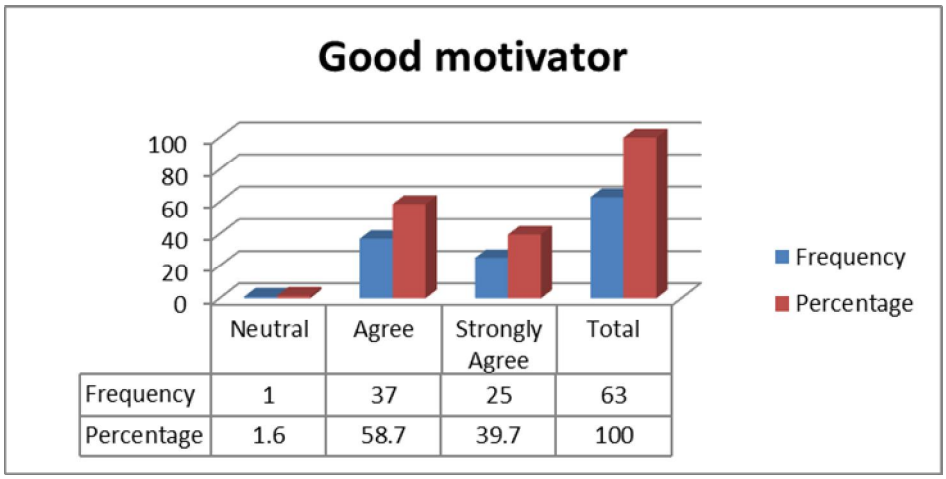
Source: Author's own construction

Figure 5.43 shows that 95.3% of the respondents believed that an effective manager should have good negotiation skills, while 4.8% were neutral. Negotiation is dependent on communication. Good negotiation skills are a critical success factor for a project manager; it can be used to resolve conflict between team members; negotiating with a supplier; and to negotiate with senior management on behalf of the subordinates. Negotiation does not only include dealing with people, because a project manager often has to negotiate around the project triangle and resources in order to deliver the project successfully. In an event where there are costs over runs in a project, it is the responsibility of the project manager to negotiate with the project sponsor and to motivate why the sponsor should inject more money into the project. It can, therefore, be concluded that a project manager with good negotiation skills is critical to the success of a project.

5.4.8 Good motivator

The intention of this question was to determine whether being a good motivator is a characteristic of an effective manager. The results of the study are shown in Figure 5.44 below.

Figure 5.44 – Good motivator



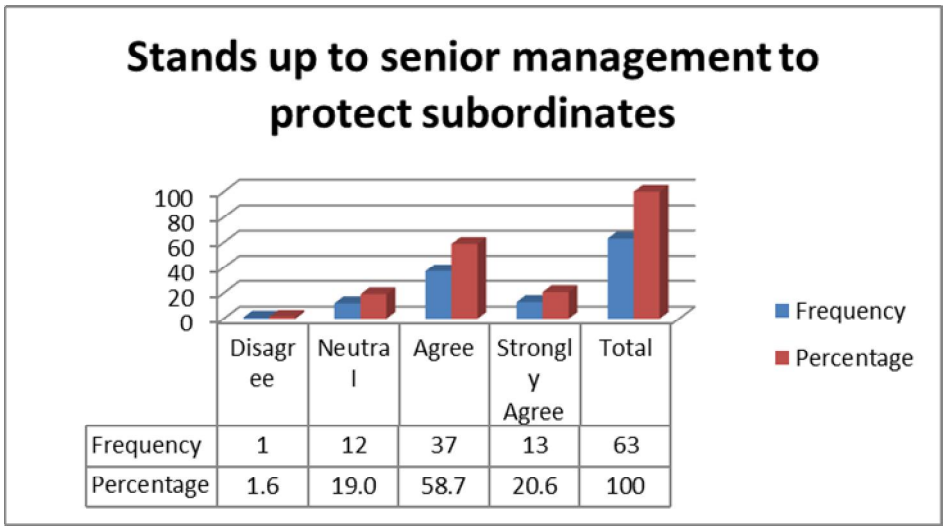
Source: Author's own construction

Figure 5.44 illustrates that 98.4% of the respondents agreed that motivation skills is one of the traits of an effective project manager, while 1.6% were neutral. One of the biggest responsibilities of a project manager is to encourage and motivate each and every single team member to commit to successfully delivering the project. Having efficient and effective processes creates a conducive environment for project success, and this is one of the ways of getting the project team motivated. With the right systems in place, the project team will know exactly how they are doing and their individual contribution to the project, and this should get them motivated. It is also critical to physically do things to motivate team members such as having boerewors rolls and drinks at the end of a meeting to celebrate achieving a milestone in a project. This will re-assure the team members that their input is appreciated, and this will give them a feeling of wanting to work with the project manager in future projects. From the study it can be concluded that an effective manager should have good negotiation skills.

5.4.9 Stands up to senior management to protect subordinates

The intention of this question was to determine whether an effective manager stands up to senior management to protect subordinates. The results of the question are shown in Figure 5.45 below.

Figure 5.45 – Stands up to senior management to protect subordinates



	Disagree	Neutral	Agree	Strongly Agree	Total
Frequency	1	12	37	13	63
Percentage	1.6	19.0	58.7	20.6	100

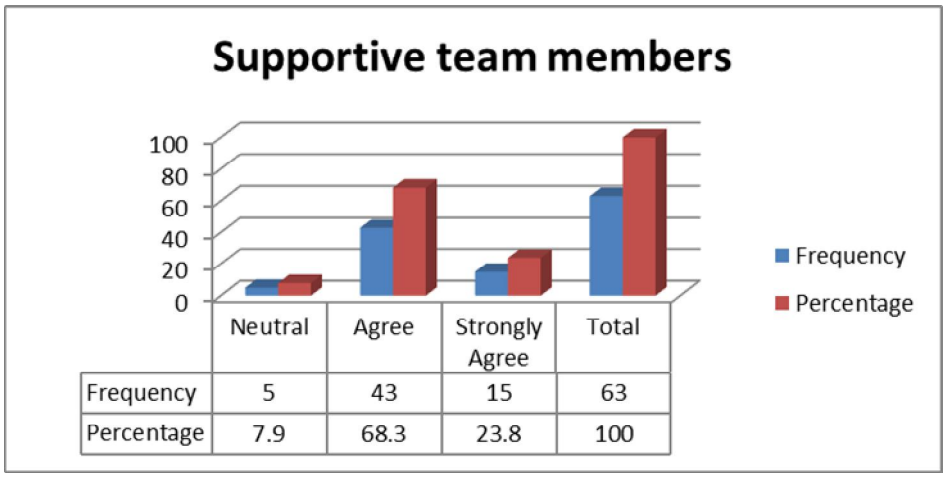
Source: Author's own construction

The results in Figure 5.45 illustrate that a majority of the respondents (79.3%) believed that an effective manager should stand up to senior management to protect his/her subordinates, while 19% were neutral and 1.6% disagreed. An effective manager should be able to negotiate with senior management on behalf of the subordinates. This will also assist in gaining team members' confidence and trust, which will in turn lay the ground for successfully delivering the project.

5.4.10 Supportive of team members

The intention of this question was to determine whether an effective manager should be supportive to team members. The results of the question are shown in Figure 5.46 below.

Figure 5.46 – Supportive of team members



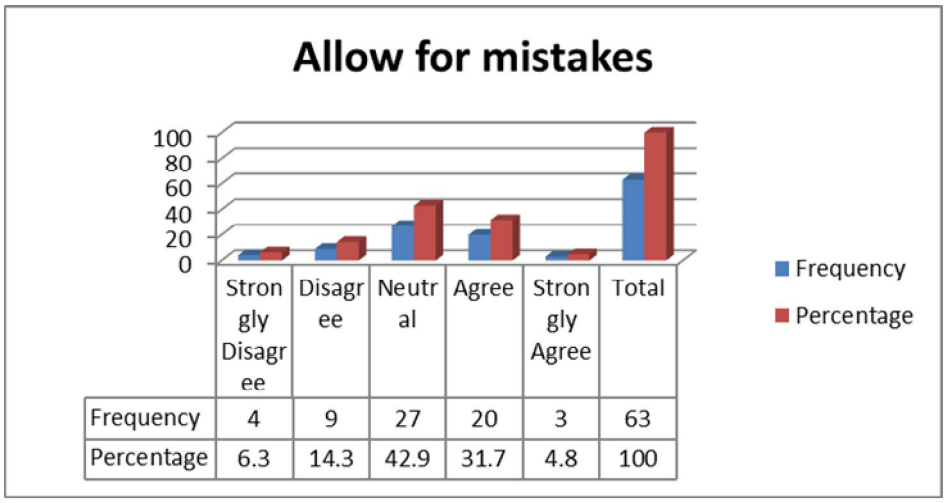
Source: Author's own construction

A total of 92.1% of the respondents, as shown in figure 5.46 agreed that an effective manager should be supportive towards team members, while 7.9% were indecisive. One of the best ways to support team members is to have efficient and effective processes in the project. With the right systems in place the project team members should not struggle to deliver the project successfully. Supporting team members is, therefore, critical to the success of the project.

5.4.11 Allow for mistakes

The intention of this question was to determine whether an effective manager should allow subordinates to make mistakes. The results of the study are shown in Figure 5.47 below.

Figure 5.47 – Allow for mistakes.



	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total
Frequency	4	9	27	20	3	63
Percentage	6.3	14.3	42.9	31.7	4.8	100

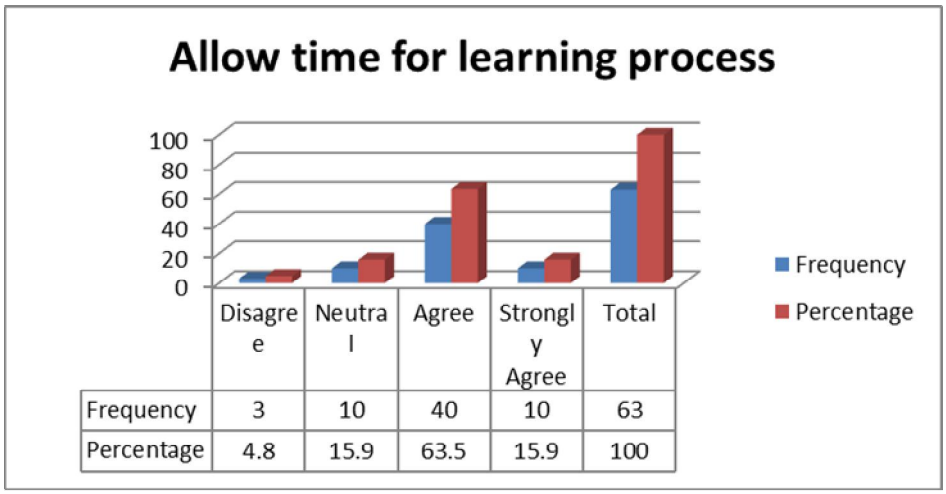
Source: Author's own construction

Figure 5.47 shows that a majority of the respondents (42.9%) were indecisive about this question, while 36.5% believed that he/she should allow for mistakes and 20.6% disagreed. It appears as through a majority of the respondents that were neutral might have misunderstood the question. Having a level of leniency within a project is essential. Team members might make mistakes from time to time and as long as the mistakes can be proven not to be owing to negligence, the project manager should allow for mistakes. It is critical for a project manager to leave room for mistakes in a project, and these should be managed as part of the risks.

5.4.12 Allow time for learning processes

The intention of this question was to determine whether an effective manager should allow time for learning process in a project. The results of the question are shown in Figure 5.48 below.

Figure 5.48 – Allow time for learning processes



	Disagree	Neutral	Agree	Strongly Agree	Total
Frequency	3	10	40	10	63
Percentage	4.8	15.9	63.5	15.9	100

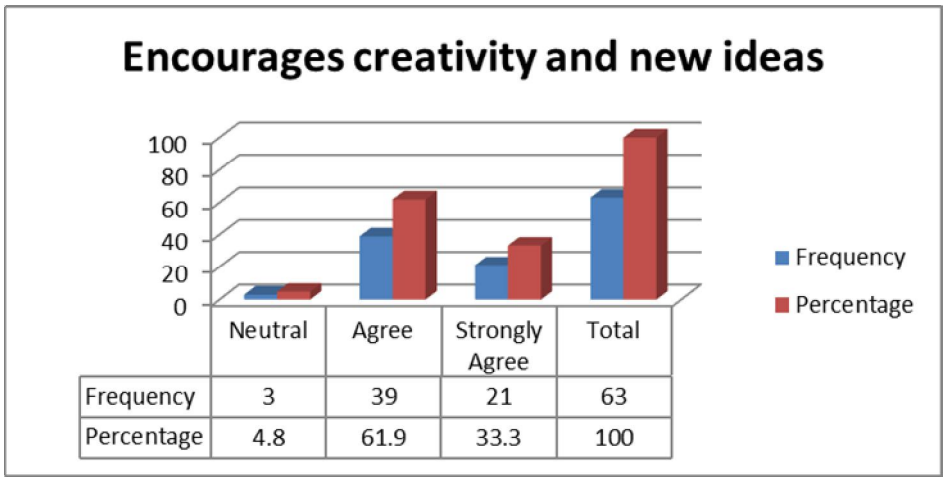
Source: author's own construction

The results in Figure 5.48 show that 79.4% of the respondents believe that an effective manager should allow time for learning processes, while 15.9% were indecisive and 4.8% did not agree. Learning in a project environment is crucial to the success of the project. A project manager should allow time for learning, because this is when the project team is motivated to think outside of the box and be creative and innovative. Creativity and innovation will assist in delivering the project in a more efficient way. It can be concluded from the study that an effective manager allows time for learning processes.

5.4.13 Encourages creativity and new ideas

The intention of this question was to determine whether an effective manager should encourage creativity and new ideas in a project. The results of the question are shown in Figure 5.49 below.

Figure 5.49 – Encourages creativity and new ideas



	Neutral	Agree	Strongly Agree	Total
Frequency	3	39	21	63
Percentage	4.8	61.9	33.3	100

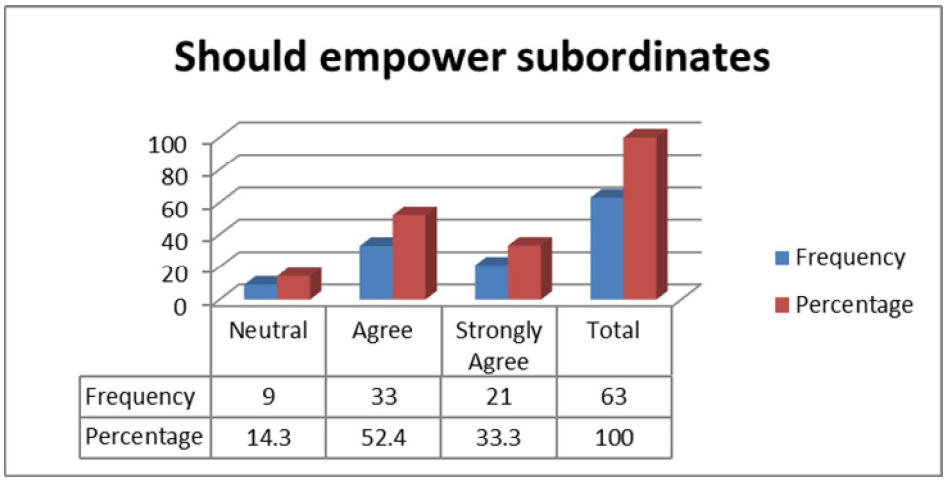
Source: Author's own construction

A total of 95.2% of the respondents, as shown in figure 5.49 agreed that an effective manager encourages creativity and new ideas, while a minority of 4.8% were indecisive. Good leaders always encourage the team members to be creative and to come up with new ideas. Generally, creativity and innovation can be quite a difficult concept to understand, however, there are key aptitudes that contribute to the success of most. Creativity involves introducing new and original ideas in a system to help to improve and streamline processes. It is therefore, imperative that an effective project manager should encourage his/her team to be creative and innovative.

5.4.14 Should empower subordinates

The intention of this question was to determine whether an effective manager should empower his/her subordinates. The results of the study are shown in Figure 5.50 below.

Figure 5.50 – Should empower subordinates



	Neutral	Agree	Strongly Agree	Total
Frequency	9	33	21	63
Percentage	14.3	52.4	33.3	100

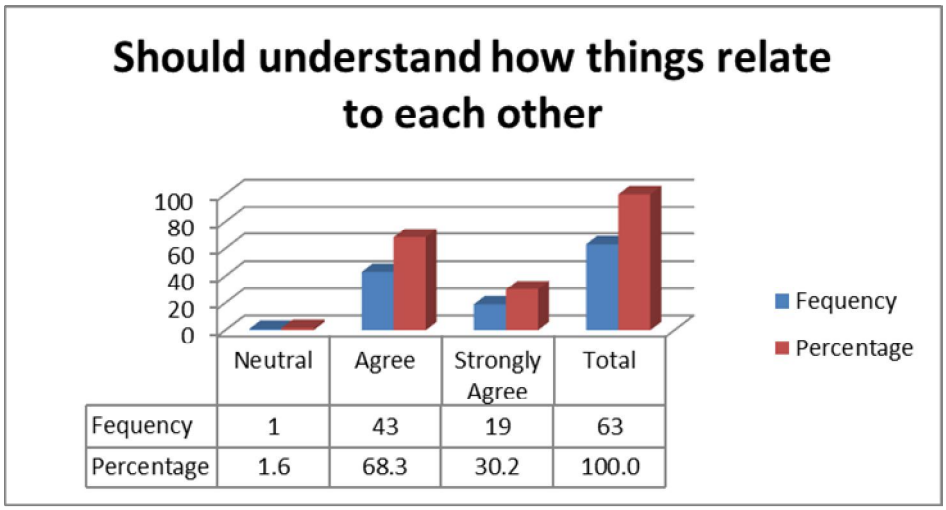
Source: Author's own construction

An 85.7% majority of the respondents, as shown in figure 5.50 believed that an effective manager should empower his/her subordinates, while 24.3% were neutral. It is critical for the project manager to empower subordinates, and this can be achieved by listening to the team members and taking their considerations or inputs into account, whilst making sure that all the team members feel that they are part of the team by including everyone. The items above are critical to the empowerment of the project team, and as empowered project team is a motivated and successful project team. It can, therefore, be concluded from the results that an effective project manager is one who empowers his/her subordinates.

5.4.15 Should understand how things relate to each other

The intention of this question was to determine whether an effective manager should understand how things relate to each other in a project. The results of the question are shown in Figure 5.51 below.

Figure 5.51 – Should understand how things relate to each other



	Neutral	Agree	Strongly Agree	Total
Fequency	1	43	19	63
Percentage	1.6	68.3	30.2	100.0

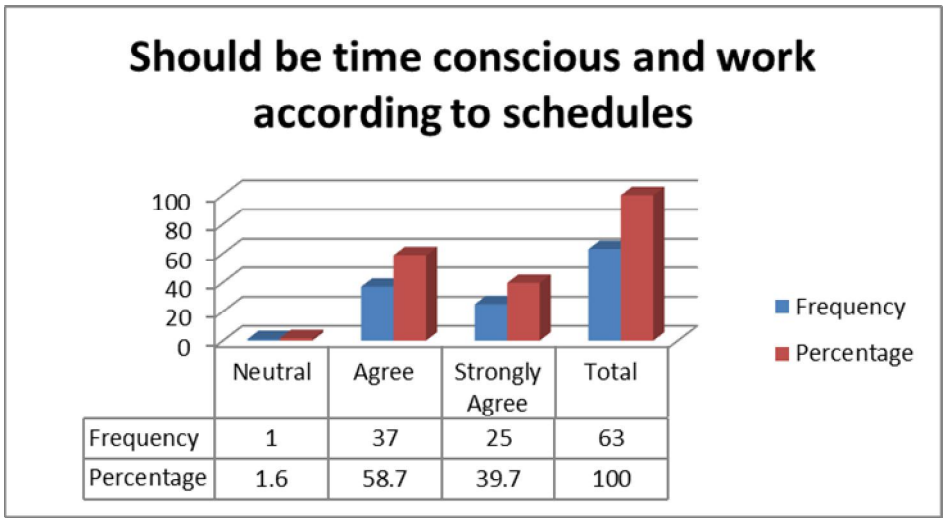
Source: Author's own construction

A 98.4% majority of respondents agreed that an effective manager should understand how things relate to each other within a project, while 1.6% minority were neutral. An effective manager should exercise logical thinking to enable him/her to deliver successful projects. In a construction project there are different disciplines involved, and it is critical that the project manager should understand the different elements and how they relate to each other. As an example, a project manager in the construction industry should understand that the builder cannot install a false ceiling without installing the air conditioning ducts and wire ways for the electrical services. An understanding of how things relate to each other by the project manager in a construction project is critical, because the lack of understanding can lead to cost overruns, which may mean doing things over. The costs of rectifying problems are far greater that the costs of doing things right the first time.

5.4.16 Should be time conscious and work according to schedules

The intention of this question was to determine whether an effective manager should be time conscious and work according to schedules. The results of the question are shown in Figure 5.52 below.

Figure 5.52 – Should be time conscious and work according to schedules.



	Neutral	Agree	Strongly Agree	Total
Frequency	1	37	25	63
Percentage	1.6	58.7	39.7	100

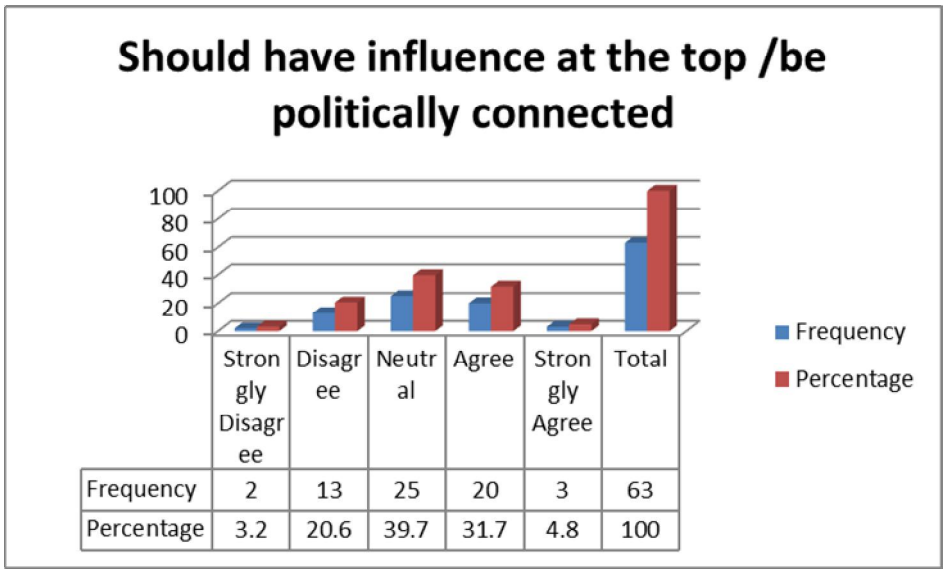
Source: Author's own construction

Figure 5.52 shows that 98.4% concur that an effective manager should be conscious of time and work according to schedules. It is critical for a project manager to comply with the project plan. According to Knipe *et al.* (2008:97), the project plan comprises of the project charter, description of the project management approach, the scope statement, work breakdown structure, cost estimates, major milestones and target dates, key risks, subsidiary management plans, issues and pending decisions that are relevant to the project. A project plan will assist the project manager to manage time and understand the work schedule, and this consciousness of time and working according to the schedule will assist to deliver a successful project. It can be concluded from the study that an effective project manager that uses good project management practices should be time conscious and work according to schedules.

5.4.17 Should have influence at the top/be politically connected

The intention of this question was to determine whether an effective manager should have influence at the top/be politically connected. The results of the question are shown in Figure 5.53 below.

Figure 5.53 – Should have influence at the top/be politically connected.



	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total
Frequency	2	13	25	20	3	63
Percentage	3.2	20.6	39.7	31.7	4.8	100

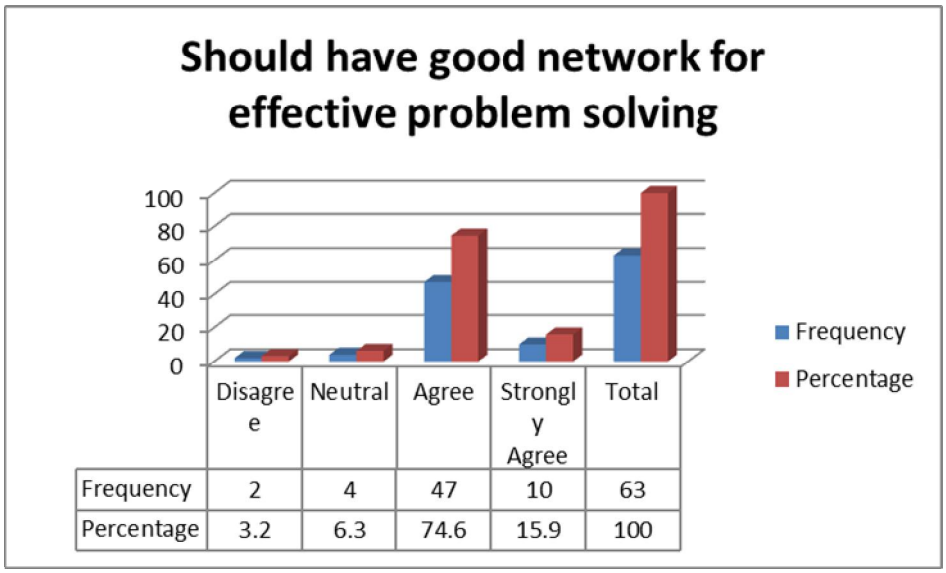
Source: Author's own creation

Figure 5.53 shows that 39.7% of the respondents were indecisive, while 36.5% concurred that an effective manager should have influence at the top and should be politically connected. A total of 23.8% did not agree. In an environment where you have people with different ideas, personalities, cultural backgrounds, and so on, friction is bound to occur and this friction can cause a meltdown in the working relationship amongst team members, which forms part of project politics. There is a link between the success of a project and the ability of the project manager to understand the important role that politics plays in a project. The key is for the project manager to make the politics work to the advantage of the project. An effective project manager is one who uses the best political strategies to realise the project's objectives. From the results of the study it appears that the question was not as clear to the respondents, because a majority were neutral on the matter.

5.4.18 Should have good networks for effective problem solving

The intention of this question was to determine whether an effective manager should have a good network for effective problem solving. The results of the question are shown in Figure 5.54 below.

Figure 5.54 – Should have good networks for effective problem solving



	Disagree	Neutral	Agree	Strongly Agree	Total
Frequency	2	4	47	10	63
Percentage	3.2	6.3	74.6	15.9	100

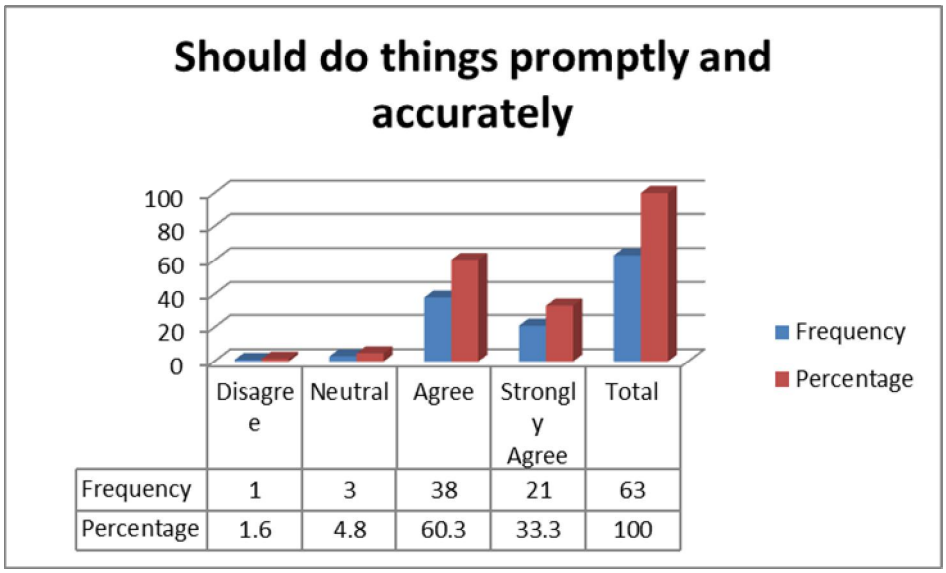
Source: Author's own construction

A 90.5% majority of the respondents concurred that an effective manager should have a good network for effective problem solving while 6.3% of the respondents were indecisive and 3.2% disagreed. It can be concluded from the results that a project manager should have a good network for effective problem solving. In a project there are different stakeholders and it is critical that project managers should know who to talk to about what and when.

5.4.19 Should do things promptly and accurately

The intention of this question was to determine whether professionals who are involved in project management think that a project manager should do things promptly and accurately. The results of the question are shown in Figure 5.55 below.

Figure 5.55 – Should do things promptly and accurately.



	Disagree	Neutral	Agree	Strongly Agree	Total
Frequency	1	3	38	21	63
Percentage	1.6	4.8	60.3	33.3	100

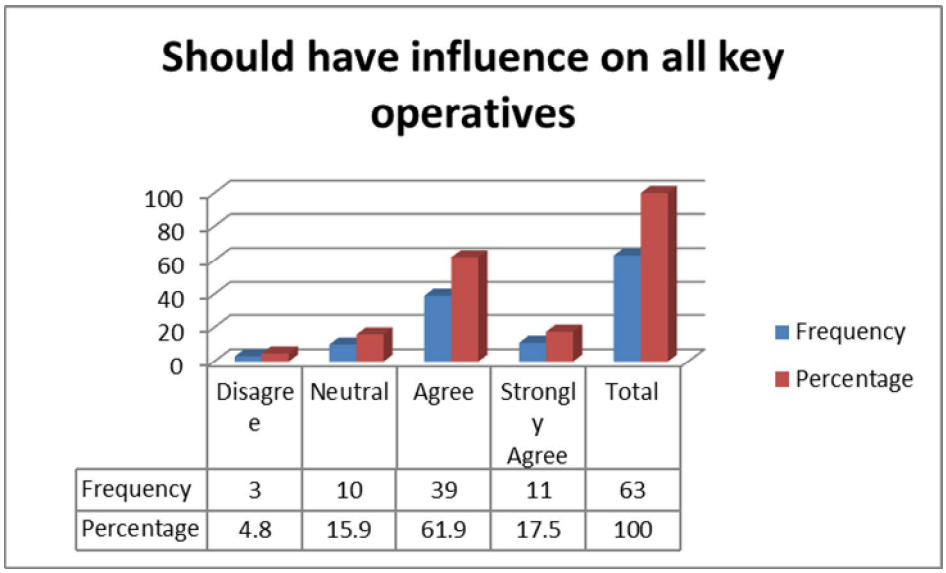
Source: Author's own construction

A 93.6% majority of respondents agreed that an effective manager should do things promptly and accurately, while 4.8% were indecisive and 1.6% minority disagreed. Time in a project is money, thus it is critical for the project manager to understand the value of time in a construction project. When queries and challenges arise, it is required from the project manager to act promptly and accurately, while taking into account the trade-offs between time, cost and quality in a project.

5.4.20 Should have influence on all key operatives

The intention of this question was to determine whether professionals who are involved in project management think that a project manager should have influence on all key operatives. The results of the question are shown in Figure 5.56 below.

Figure 5.56 – Should have influence on all key operatives



	Disagree	Neutral	Agree	Strongly Agree	Total
Frequency	3	10	39	11	63
Percentage	4.8	15.9	61.9	17.5	100

Source: Author's own construction

Figure 5.56 shows that 79.4% of the respondents agreed that for a manager to be effective, he/she should have influence on all key operatives, while 15.9% were neutral and 4.8% did not agree. It is important for a project manager to have influence on all key operatives, because one of the important roles that a project manager plays is getting the project proposal signed off by the project sponsor. This is one of the situations where the project manager is required to deploy his/her soft skills to influence the direction of the project. The same applies to the horizontal plane where the project manager has to influence the project team to buy into his/her vision for the project. The project manager's influence has to be from top to bottom and sideways in order for a project to be succesfull.

5.5 Section A&B – Additional comments

At the end of section A&B there was a section that asked respondents to add anything else that they wanted to contribute.

5.5.1 Please comment if there is anything that you wish to add

The purpose of this request was that the respondents could add whatever additional information they felt could be beneficial to the study and was not in the questionnaire, as per Annexure A. An 87% majority of the respondents did not have anything to add, while 13% of the respondents

did. The respondents highlighted key attributes, which they believe are required for effective project management. They pointed out that project managers should understand cultural diversity involved in project management, and that they should be versatile because there are constant changes in a project environment. Effective project managers should be good at delegation and be a people's person and it is also crucial to have a project management specialist in a project, because project management is a niche profession. They further stated that effective leading and management begging's by being flexible, and not everything always goes as planned. Together with communication and courage, tenacity and patience, subordinates are well driven to complete any task at hand and project managers should be approachable for discussion for any matter, and provide clear answers for any item.

5.6 Section C – Identify four most important characteristics of effective project management. Start by listing the most important to the least important

This section presents and discusses the characteristics of effective project management. The respondents were asked to identify four most important characteristics, and to identify them from the most to the least important.

5.6.1 What would you consider to be the characteristics of effective project management?

A majority of the respondents (98.4%) responded, while 1.6% did not complete the information. The results show that the respondents answered differently and the priorities of the different characteristics differed. There was no pattern in the way that the respondents answered this question. However, there were a few characteristics that stood out and are in agreement with the study, and these presented below in no order of importance. Communication; team work; delegates tasks; respects team members; motivates team members; manages time well; manages situations where there are time constraints; plans, assesses and mitigates; technical competence; confidence; praises his/her team for good work; is analytical; understands schedules; understands the project and is familiar with the industry; is a visionary; assertive and decisive; and uses an accurate construction program. For a project manager to be effective, he/she should adopt the characteristics of a leader. For any organization to be succesfull there is a requirement for three levels to exist within that organization. There is a need for the workers "production" to get the work going, and there is a need for managers to make sure that things

are done without any ambiguity, and there are leaders whose role it is to set the vision and direction in which the organization should go. For the leader to be successful in executing his/her work, he/she should have these characteristics, as mentioned by the respondents.

5.6.2 What factors do you think contribute to ineffectiveness amongst project managers?

The purpose of this question was to determine what professionals in the construction industry thought were factors that contribute to the ineffectiveness among project managers. A total of 96.8% of the respondents responded and 3.2% did not complete the information. There was no pattern in the way that the respondents answered this question because of the level of importance of different contributing factors to ineffectiveness, which differed from individual to individual. However there were a few characteristics that stood out and agreed with the study, and these are mentioned below in no order of importance. Not being time conscious; allowing too many mistakes; bad communicator; not supporting the team; lack of respect; poor planning; not understanding the project; lack of technical competence; lack of resilience; not a team worker; lack of trust for subordinates; not delegating tasks; lack of decision making; influence from other project members; cannot prioritize; does not make time for small talk with subordinates; un approachable; egotistical; failure to motivate and build cohesive teams; not sufficient authority (authority gap); poor leadership; insecurities; not qualified; and arrogance.

5.6.3 What do you think project managers should do to make project execution successful?

The purpose of this question was to determine what professionals in the construction industry believe project managers should do to make project execution successful. A majority of the respondents (96.8%) responded and 3.2% did not complete the information. There was no pattern in the way that the respondents answered this question because the level of importance of the requirements from project managers to make project execution successful differed from individual to individual. However, there were a few characteristics that stood out and were in agreement with the study, and these are pointed out below in no order of importance. Good communicator; planning (Gant chart); be concise; facilitate problem solving; set realistic deliverables; regular meeting to check progress; be a good delegator; assign the correct

resources to the correct job; clearly define objectives; break the projects into tasks (work breakdown structure – WBS); identify long lead items; clearly define scope; resource planning; financial control; visionary; confidence; respect team members; share responsibility and accountability; acknowledge good work of the team; have a detailed understanding of work flow (Critical Path Method – CPM); motivation; listening; must have knowledge of the tools required (WBS, Gant charts); manage politics; good people skills; good at team selection; and be time conscious.

5.6.4 Please list things that you expect from an effective leader, apart from what has been mentioned.

The purpose of this question was to determine what professionals in the construction industry expect for an effective leader. A total of 79.4% of the respondents responded and 20.6% did not complete the information. There is no pattern in the way that the respondents answered this question because their expectations from project managers differed from individual to individual. However there were a few characteristics that stood out and were in agreement with the study, and these are pointed out below in no order of importance. Humble with technical expertise; good planner; good communicator; motivator; cares for team members; strategists; knows the market trends; open minded; flexible; well organized; allows training; allows team to make decisions; peoples person; innovative; time conscious; precise; mentor/role model; ingenuity; respectful; confident; leads by example; well dressed; understand peoples personalities; lead; resourceful; good risk manager; honest; kind; committed; authority; accountable; qualified; must have industry influence; and emotionally intelligent.

5.7 Summary

The chapter I presented and discussed the results of the survey. The aim was to present the results in the form of graphs and tables, and to analyse them in order to answer the questions that were asked in the questionnaire. The responses that were received from the respondents were in agreement with the literature review in Chapter Two of this research document. The key elements of leadership are aligned with people. The respondents agreed that an effective project leader is a people's person. The results also showed that the respondents agreed that the existence of the authority gap can have a negative impact on successfully delivering

projects, which means that project managers should have all the authority to enable him/her to achieve the project's objectives.

The next chapter summarizes the results, concludes the study and makes recommendations based on the survey's findings.

Chapter 6 – Findings, conclusion and recommendations

6.1 Introduction

The objective of the study was to investigate the critical core competencies, which are required for effective project leadership. With the increased demand of project management skills in the construction industry it is critical that these competencies should be determined. In the last couple of years tertiary institutions have been introducing project management as an independent qualification, whereas in the past it was done as a subject or as part of an engineering or management course. The types of projects that the construction industry is involved with are becoming more and more complex, and there is a greater need to sub-divide the packages owing to their complexities. With advancements in technology and development of the human race, it is proving increasingly critical to have the right man/woman for the right job when it comes to project management in the construction industry. This is owing to the high failure rate of some of the major projects that the greater construction industry has been involved with \such as the Calcutta Metro project in India. Emphasis is placed here on the quest to understand the competencies that are required to help to achieve project management success and not project success. Understanding these critical effective competencies, which are required for effective project execution will assist to deliver successfully managed projects as per client's specifications, within the agreed scope (deliverables), within the quality and at the budgeted cost, without any flaws in other elements of the execution of projects. The knowledge of the competencies will help us to understand the essence of the soft and hard skills, and how they relate to the effective implementation of the project's processes. The intention, therefore, is that a good understanding of the failure factors, specifically as they relate to soft skills, may be corrected with the resultant reduction of the present high failure rate in project execution.

In the previous chapter the findings of the study were presented in relation to the research objectives, as outlined in Chapter One of this document. These research objectives identified the competencies that are generally used by project leaders in the construction industry, and to identify the critical indispensable competencies that a project manager at a construction site needs to reduce project failure. This chapter presents the findings in respect of the data that was collected from the survey, and the objectives of the previous chapters are also discussed. The purpose of discussing the objectives of the previous chapter is to determine whether there is a link between the new data from the findings and

the currently available data and information. The recommendations point out areas where is required in order to improve the skills of project managers and to help new and upcoming project managers by providing them with the necessary and strategic tools that are required to deliver successful projects.

6.2 Summary of objectives of previous chapters

The concept was introduced in the first chapter and the importance of the study was also highlighted. With the brief literature review in the first chapter, a gap for the study was identified which helped to structure the problem statement. The problem statement was logically followed by stipulation of the research objectives, including the research design and research methodology. The target population was discussed including the sample size, sampling selection and method of sampling as well as the limitations of the study. Ethical consideration was also discussed, and the nature of the research was clarified as having no ethical problems.

The next chapter introduced the concept of the authority gap and considered the prominent leadership styles that are used in project execution. The difference between a matrix structure and a project organization were explained and the advantages of a project organization over a matrix structure were also presented. A further in-depth analysis of the differences between a project manager and a functional manager were highlighted and the characteristics of each were briefly discussed. The chapter also made a distinction between leadership and management, thereby emphasizing the need for project leadership, as opposed to project management, given the political and structural dynamics in projects, and specifically, embedded projects. An in-depth analysis of the different styles of leadership, their pros and cons and how they affect project delivery was made in the literature review. The chapter concludes by considering the impact of the authority gap in project delivery and the challenges that it presents to project managers and how they should work to overcome the authority gap, which makes their operational terrain different from traditional management.

Chapter Three introduced the hard and soft skills and the evolution of the tools and techniques of project management to date. Both hard and soft skills were defined and the distinction between hard and soft skills that are required in project management was made. An in-depth analysis of the different soft skills that are required were considered and it was highlighted that the soft skills are more to do with people than the actual execution of the

project such as scheduling, and so on. The hard skills were also explained more in-depth and it was highlighted that the hard skills are more related to the execution of the project such as understanding the tools, which are used in project management, namely Microsoft project and determining the deliverables that are on the critical path. The chapter concluded by pointing out that the use of both soft and hard skills together should lead to the successful delivery of projects.

Chapter Four introduced the research design, theoretical aspects of research methodology and the research strategy. The target population and the sample size, as well as the research objectives were also discussed, including the limitations of the study. The method of data collection, sampling selection and method of sampling were discussed, while the use of stratified random sampling method was suggested and justified. Assumptions that were made for the research were also discussed, together with the data analysis, validity and reliability, sampling bias and ethical considerations for the research methodology and research design.

Chapter Five presented and discussed the results of the critical core competencies, which are required for effective project leadership. The results were presented in a form of graphs and tables with explanations and interpretations accompanying each graph. The results and findings were discussed in detail, with special reference to the research objectives, as set out at the beginning of the study. The chapter concludes by stating that the respondents also are also agreed that the existence of the authority gap has a negative impact of project delivery.

6.3 Discussion of findings, conclusions and recommendations

Here the key points or highlights of the results and findings, as discussed in Chapter Five are briefly discussed and recommendations are given. The recommendations and conclusions are based on the researcher's understanding and interpretation of the meaning from the data that was collected.

6.3.1 Characteristics of an effective leader

Leaders are individuals in an organization or project who are responsible for setting the vision for the project and aligning the vision with the project's objectives. Leaders are also responsible for directing the project and influencing the direction in which the project should

move. They are responsible for ensuring that the project stays on the right track in the midst of political interference and conflicts that may arise. The qualities that are expected of leaders, as per the findings discussed in the previous chapter include communication, technical knowledge, relationship with project political mindset, accountability, decisiveness, and serving as a role model in the organization.

6.3.1.1 Communication

The findings show that effective communication is a trait of an effective leader. It can also be seen that communicating the right information to the right person at the right time limits delays in the project, and leads to project success. A conclusion is hereby made that having a formal communication plan/structure in a project and taking and distributing minutes from meetings on time to the right people, will keep the project team aware of their deliverable, which will contribute to the smooth operation of the project. Communication should be understood as effective only when the right message in the right format is given to the right person at the appropriate time while using appropriate media.

Recommendation: Communication plays a major role in delivering projects successfully, hence it is important that a project manager should establish a communication plan during the initiation phase of the project. The main purpose of this communication is to minimize problems that may arise owing to a lack of communication or the unavailability of data and information that is needed to make informed decisions. With a communication plan, in place the right information will go to the right person at the right time, thus reducing any project delays. Communication also refers to the project manager communicating activities to the project team on a regular basis, which will ensure that all the project stakeholders are kept informed. Conversely the concept of communication also applies to the way in which the project manager communicates with the project team; does he/she do it with respect or disrespect? Respect for project team members is critical for the success of a project, depending on levels of motivation amongst project team members. A communication Gantt chart may be the ideal way to control the communication process amongst project administrators.

6.3.1.2 Persona

The conclusion that can be made based on the results is that an effective leader should be someone who is self-confident and is able to motivate team members. Another conclusion is that for a project manager to be an effective leader he/she should have good interpersonal skills and spend time to project team members not only at technical meetings, but also at a social level without compromising project delivery. The leader should be open to the project team members' ideas and be open-minded when it comes to innovation by considering and encouraging the team members to think progressively. Another conclusion that was reached is that the leader should be considerate towards the project team's circumstances. It can also be concluded that a project team leader should show that he/she cares for his/her project team members, and he/she should have the confidence of the team members while he / she shows self-confidence. It is easier for project team members to trust a leader who appears confident and knowledgeable about the work in progress. It is also ideal to have someone who is a role model in the organization as a project leader, because this will bypass the stage in a project where project team members are not sure whether or not to trust the project leader. Building self-confidence is a result of many factors, chief among them are knowledge of the industry, knowledge about the work to be done, proper and appropriate skills, support from senior management, and previous experience in the trade, as this reduces stress and anxiety from the project leader.

Recommendation: Many times projects in the construction industry have failed owing to project managers not having the interpersonal skills that are required to deal with people. This leads to the conclusion that the personality of a project leader plays an important role in the outcomes of a project. It is important that organizations should start to look at the personality of the individuals who lead project teams and not merely consider the qualification, because personality carries more weight than the qualification. Not to undermine the qualification, but the biggest contributing factor to project success is the people who are involved in the project, namely people who do the work.

The project leader should be an individual that the team members look up to and trust; be it through a proven record or someone that is a role model in the organization, and has the confidence of the staff. The project leader should be approachable and he/she should be someone who takes into account each and every team member's opinions / contributions to the success of the project. The project leader should also be decisive and make informed decisions and trust the team members when it comes to making decisions on items that

involve their specialized trades. It is recommended that current project management specialists who lack the required personality traits should go for training to build these skills which are necessary for successful project delivery. It is also recommended that research should be conducted to establish as to what extent the persona of the project leader plays a part in the successful delivery of a project.

6.3.1.3 Knowledgeable (technical)

The construction industry is technical in nature and, in the main, involves diverse skills from different engineering discipline such as electrical engineering, civil engineering, architecture, quantity surveying, and environmental science in respect of environmental impact assessments. The concepts that are discussed by these professionals are foreign to an individual with a human resources or event management background, since jargon is spoken by people within certain disciplines. It can be concluded that the project leader should have a technical back ground and understand the processes involved in the construction industry, but it should also be emphasized that soft skills get the work done. Understanding of the processes will assist the project leader with the programing and sequencing of the activities involved in the construction process. Not understanding the processes and the sequencing will affect the way in which project team members view the project leader, and they will not have confidence in their leader, which may affect the delivery of the project. A project leader who has a technical background will be able to contribute at technical/design meetings and will easily facilitate progressive thinking. The leader will also understand different innovations that the team presents so that he/she will be able to sell it to the project sponsor. It is better to give the client a more innovative solution than an average solution, which everyone offers in the industry, and having someone who is technical such as a project leader, is advantageous.

Recommendation: It is recommended that project leaders should have sessions that are dedicated to value engineering for construction projects, because this will increase their value to the clients, particularly if the project team comes up with innovative ways of doing things that are first within the industry. These sessions are technically driven and it is critical for the project manager to be an individual who has technical experience in the construction industry, because if the project manager adds technical input to the project this will further assist in earning him/her respect and confidence amongst project team members. The technical know-how also helps the project manager to gauge levels of competency of the team members.

6.3.1.4 Influential (political, team members – conflict, client)

The capability of these effective leaders should not only end with technical knowledge as hard skills. He/she should be someone who can handle and manage conflict, and conflict involves all people, including technical people in the construction industry. Conflict in a project causes a shift of focus on project execution issues to personality issues, and can lead to project failure, if not managed well. Conflict management goes hand-in-hand with emotional intelligence, because a person with a high level of emotional intelligence knows how to manage his/her emotions and the emotions of others, thus it can be concluded that emotional intelligence is a critical skill that is required for an effective project leader. It can also be concluded that it is pivotal for the project manager to have a risk management plan where he/she points out all the items that he/she and the project teams regard as risks that could affect the delivery of the project. These risks and uncertainties should be pointed out to the client at the initiation phase, and they can be added and removed as the project progresses. Establishment of the project risk schedule will help the project manager with the ability to pre-empt some risks, prepare for any eventualities, and improve on accountability. Each item on the project risk register should have a responsible person, and it is up to the project manager to ensure that there is follow up with project team members regarding items that are on the register. Should the project manager fail to follow-up on the items, then he/she will be accountable for the failure of the project and must take responsibility.

The leader should also be someone that is decisive and politically connected and he/she should use his/her influence to get things done and get decisions made. The most important item where the project manager should use his/her influence is getting the project scope and costs signed off by the client, because the signing of the project proposal is an important milestone within a project. The project manager should be the decision driver on the project. It is his/her responsibility to make sure that decisions are made and that no time is wasted on decision making, because time wasting means money wasted and contractors claim additional preliminaries and generals as a result of any time delays which result in the client paying more money.

Recommendation: it is recommended that the project leader should be an individual who can manage and function well in conflict situations and should have a high level of emotional intelligence, which should be considered when appointing project leaders. It is also recommended that he/she should be influential and levels of influence can also go with

technical ability, which was discussed in 6.3.1.1 because the project leader should know what he/she is talking about when getting a-sign-off from the project sponsor. It is further recommended that the project leader should have a risk management plan in place at the beginning of the project to highlight all the items that pose a risk to the success of the project. This will protect the project manager in case something goes wrong in the project owing to team members not doing what is required of them.

6.3.1.5 Leadership

It can be concluded that an effective project leader should be an all-rounded individual with a good understanding of situational leadership. He should understand both soft skills and hard skills, which are required to deliver projects successfully, regardless of the nature of the task. The respondents indicated that the personality of the leader is key to the success of the project; the leader should be empathetic, promote knowledge sharing, make time for subordinates, trust subordinates, and should be self-confident and steer the team in the right direction. The results also suggest that the leader should understand and know the tools that are required for delivering projects successfully; he should understand scheduling, cost management, time management, quality management and communication management.

Recommendation: it is recommended that organizations should take into account both the soft and hard skills that are required from a leader when making appointments for project leaders. Generally, all-rounded-individuals are practitioners who have been in the industry for years and have the necessary expertise and years of experience required to deliver a complex project. But cognisance is taken that the current failure rate of projects at plus or minus 47% - 61% is taking place in an environment where 97% of the project managers in technical projects have the requisite hard skills. This, therefore, talks to the fact that hard skills are not a primary criterion for effective project execution. Hence, the study emphasizes the human element of project execution, since it is people who get the work done and not expert technical knowledge.

6.4 Conclusion

The objectives of the study was to identify competencies, which are generally used by project leaders in the industry, specifically the construction industry, and to identify the critical indispensable competencies that the project manager at a construction

site needs to reduce project failure. The study revealed that effective project leaders should be individuals who have high levels of emotional intelligence (self-awareness, others-awareness and social-awareness). It is important, therefore, for further research to identify sources of EI and to emphasize these for the purposes of training for project managers. The hard skills are essentially a by-product of IQ, which is essentially to be school wise and to get you the interview. But Emotional Intelligence (EQ), which is essentially, being 'street wise', will get you the job and can get you to get the job done. Much emphasis should be place on the training of peoples' emotional intelligence, with special focus on communication, development of interpersonal relationships, responsiveness and empathy towards participants in the project operational process. It is, therefore, postulated here that contextualized and situational application of appropriate soft skills are critical competencies which are essential for effective project leadership.

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APPENDICES

Annexure A – Research instrument (Questionnaire)

Dear Respondent

This is an academic exercise which investigates the core competencies for effective project leadership. We wish to improve our project leadership styles and we value your opinion. Your identity is protected and your responses are confidential. Please do not write your name anywhere on this questionnaire.

SECTION A

What do you consider as desirable behaviour by a project leader? Rank the following according to; 1- strongly disagree, 2- disagree, 3 – neutral, 4-agree, and 5- strongly agree.

	WHAT CONSTITUTES AN EFFECTIVE LEADER?	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1	Believes in working as a team	1	2	3	4	5
2	Communicates activities regularly	1	2	3	4	5
3	High self-esteem and over confident	1	2	3	4	5
4	Does not worry about the employee's personal problems	1	2	3	4	5
5	Is interested in the accomplishment of tasks more than the welfare of the employees	1	2	3	4	5
6	Trusts the subordinates and so he delegates work to	1	2	3	4	5

	them					
7	Allows subordinates to make crucial decisions	1	2	3	4	5
8	Sets out the tasks to be performed by the subordinates	1	2	3	4	5
9	Always takes time to make decisions	1	2	3	4	5
10	Has no time for small talk with subordinates	1	2	3	4	5
11	Interacts and spends time talking to subordinates chatting	1	2	3	4	5
12	Collects detailed information about any incident on which he must decide upon	1	2	3	4	5
13	Intelligent with a good grasp of issues at hand	1	2	3	4	5
14	Should be predictable	1	2	3	4	5
15	Must be easy to influence	1	2	3	4	5
16	Self confidence	1	2	3	4	5
17	Talks a lot about their achievements	1	2	3	4	5
18	Must know about construction	1	2	3	4	5
19	Must understand people	1	2	3	4	5
20	Knows the importance of politics in project management	1	2	3	4	5
21	Good at networking and creating contacts	1	2	3	4	5
22	Accepts responsibility if things go wrong	1	2	3	4	5
23	Should always seek other persons' guidance	1	2	3	4	5

24	Should have authority and instruct subordinates	1	2	3	4	5
25	Should always consult before making decisions	1	2	3	4	5
26	Should lead together with the people	1	2	3	4	5
27	Should prioritize subordinates' feelings	1	2	3	4	5
28	Should be decisive at all times	1	2	3	4	5
29	Should always lead from the front	1	2	3	4	5
30	Should focus on tasks and prioritize tasks	1	2	3	4	5
31	Should be a role model in the organization	1	2	3	4	5

SECTION B

Characteristics of effective Project Managers

	CHARACTERISTICS OF EFFECTIVE MANAGERS	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1	Leadership by example	1	2	3	4	5
2	Visionary	1	2	3	4	5
3	Intelligence	1	2	3	4	5
4	Technical competence	1	2	3	4	5
5	Assertiveness and decisiveness	1	2	3	4	5

6	Good communicator	1	2	3	4	5
7	Good negotiation	1	2	3	4	5
8	Good motivator	1	2	3	4	5
9	Stands up to senior management to protect subordinates	1	2	3	4	5
10	Supportive team members	1	2	3	4	5
11	Allow for mistakes	1	2	3	4	5
12	Allow time and learning process	1	2	3	4	5
13	Encourages creativity and new ideas	1	2	3	4	5
14	Should empower subordinates	1	2	3	4	5
15	Should understand how things relate to each other	1	2	3	4	5
16	Should be time conscious and work according to schedules	1	2	3	4	5
17	Should have influence at the top /be politically connected	1	2	3	4	5
18	Should have good network for effective problem solving	1	2	3	4	5
19	Should do things promptly and accurately	1	2	3	4	5
20	Should have influence on all key operatives	1	2	3	4	5

Any additional contributions

……

……

SECTION C

OPEN - ENDED QUESTIONS

Identify the four [4] most important characteristics of effective project management. Start by listing the most important first to the least important the spaces provided below.

What would you consider to be the characteristics of effective project management?

1……

2……

3……

4……

What factors do you think contribute to ineffectiveness amongst project managers?

1……

2……

3……

4……

What do you think project managers need to do to make project execution successful?

1.....

2.....

3.....

4.....

Please list things that you expect from an effective leader apart from what has been mentioned above.

1.....

2.....

3.....

4.....

SECTION D BIOGRAPHY

Please cross the applicable boxes

1. What is your position in the organisation?

Project manager	Project team member	Operations staff	Other

If other please specify; .....

2. How long have you been involved in projects at this level?

0 - 5 years	6 – 10 years	11 – 15 years	16 – more years

3. Are you involved in project team meetings?

No	Sometimes	Fairly regularly	Always

4. Are senior managers responsible for the day to day operations of the project?

No one	One involved daily	Many involved	The team only

5. What industry are you involved in?

Construction	I.T.	Events	Other

If other please specify; ……..

Additional comments in relation to the above

……

……

Thank you for taking part in this survey

Annexure B – Grammarian Certificate

GRAMMARIAN CERTIFICATE

24 October 2013

Dear Sir/Madam

GRAMMARIAN CERTIFICATE

This confirms that I have proof read and edited the research study entitled: "*An evaluation of critical core competencies required for effective leadership in construction*" and that I have advised the candidate to make the required changes.

Thank you.

Yours faithfully

SHAMILA SULAYMAN

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