The competency level of project managers within an organization: Individual and managers' perspective.

by

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DECLARATION

I hereby declare that the mini-dissertation submitted for the Master of Philosophy degree to the University of Johannesburg, apart from the sources recognized, is my own work and has not previously been submitted to another university or institution of higher education for a degree.

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ABSTRACT

Many organizations around the world are investing in project management tools and techniques which includes software for scheduling and budget tracking. However, they do this without evaluating the competency levels of project managers who are mostly hired based on their technical competence.

Traditionally, the approach for hiring project managers has been biased towards the right technical engineering qualifications. In today's world the practice extends beyond technical competency of project managers. Consider for instance the personal and contextual competences as advocated by International Project Management Association Competence Baseline Version 3.0 (ICB3) and International Project Management Association Competence Baseline Version 4.0 (ICB4). This research investigates the current competency levels of project managers and the perception senior managers have of the competence levels of project managers. The research questions were as follows: 1) What is the level of competence of project managers within the organization? 2) What are the senior managers' perceptions regarding the project managers' level of competence? The formulated questions were investigated under the guidelines of the Global Alliance for Project Performance Standards (GAPPS) model to evaluate the competencies by using the six units of competences. Data were collected through the use of questionnaires that were sent out to 16 project managers and four senior managers respectively.

The data from the questionnaires were analysed to identify similarities and differences in the frequencies of the units of competencies. Frequently occurring responses on some units of competence were noted. The differences and similarities in responses were grouped together and the trends were identified based on the responses.

The results provided strong evidence that allowed for the easy identification of gaps.

The conclusion and recommendations are based on the evidence. The challenges regarding stakeholder relationship management and risk management were prevalent. Inadequate risk management can severely hamper the profitability of the organization. Project managers can use the findings of this study to improve their level of competence on the units that were identified as of great concern. They can use the findings from the study to create more effective risk management plans and stakeholder relationship management plan.

The approach that was used for this study can be applied to the other three gas companies in South Africa to further understand the competency levels and what needs to be done to improve the competency levels and close the gap between the project manager's view of his competency level and the senior manager's perception regarding the level of competency.

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TABLE OF CONTENTS

LIST OF FIGURES

Figure

LIST OF TABLES

Table

List of Abbreviations

APMBoK Association for Project Management Body of Knowledge

CIFTER Crawford-Ishikura Factor Table for Evaluating Roles

DEEWR Department of Employment, Education and Workplace Relations

GAPPS Global Alliance for Project Performance Standards

HIRA Hazard Identification and Risk Assessment

ICB1 International Project Management Association Competence Baseline Version 1.0

ICB3 International Project Management Association Competence Baseline Version 3.0

ICB4 International Project Management Association Competence Baseline Version 4.0

IPMA International Project Management Association

NZQA New Zealand Qualification Authority

PM Project Manager

PMBoK Guide to the Project Management Body of Knowledge

PMCDF Project Management Competence Development Framework

PMI Project Management Institute

QCDA Qualifications and Curriculum Development Agency, UK

SAQA South African Qualification Authority

4-L-C 4 Level Certification

HIRA High Level Risk Assessment

SERSETA Services Related Sector of Education and Training Authority

CHAPTER I

Introduction

First, have a definite, clear practical ideal; a goal, an objective. Second, have the necessary means to achieve your ends; wisdom, money, materials, and methods. Third, adjust your means to that end.

Aristotle

1.1 Background to the study

This chapter introduces the research by positioning the subject, highlighting the problem statement, the purpose of the study and concluding with a research plan. The chapter identifies the gaps for research and the purpose of this specific project, which focuses on exploring the skills of project managers.

Companies worldwide invest much money on project management tools and techniques, which includes computer software for scheduling and budget tracking (*Dinsmore and Cabanis-Brewin*, 2006).

However, *Kasvi et al.* (2003) have noted that successful project completion by project managers is influenced significantly by the accumulated knowledge and collective competence of the project managers.

1.1.1 What is the Function of a Project Manager?

Project managers are responsible for the day-to-day running of the project, for ensuring that the triple constraint of time, budget and quality are addressed. In addition to this, project managers are required to manage resources, deal with behavioural and emotional flares with project team members (*Pandya*, 2014).

An effective project manager can be defined by using five key attributes:

Managerial skills - this kind of skill involves management of resources, developing and empowering and engaging.

Leadership skills - the position of project manager is demanding and requires a very bright and independent project manager who can motivate his views and opinions, especially in an industry that requires technical skills. There maybe difficulties due to the fact that the project manager is required to execute leadership roles based on the level or stage the project. The project manager has to take on the roles of manager, facilitator, mentor roles.

Team management skills - this is the ability of a project manager to direct and manage a group of people who are organized to work together interdependently and cooperatively to meet the objectives of the project (*Tibor*, 2012).

Management of Personal Distress skills - this skill refers to the ability of the project manager to manage his or her emotional and physical posture during stressful encounters. It is common knowledge that project management role carries with it the stress element that is associated with meeting the triple constraint requirement (*Flannes*, 2004).

Problem solving/ conflict management skills - Any organization will have its own culture and people who are employed in the organization come from different cultures, and these differences will surface when a problem or conflict arises. Resolving conflicts is not a particularly an easy skill to master, but with experience and training project managers are equipped to handle it when it shows up. Conflict resolution can be approached in five ways as noted by (*Flannes*, 2004; *Snyder*, 2014; *Kouzes and Posner*, 2012):

1. Avoiding- this type of strategy is used when the issue is not that important and it can be overlooked.
2. Competing- this is the opposite of avoiding strategy because the issue is important and cannot be avoided.
3. Accommodating- This strategy is used when one gives in to the other person's position.
4. Compromising-involving finding a win-win solution in which parties are able to meet each other halfway without quality suffering.
5. Collaborating-this involves finding strength in each party.

A good project manager is expected to be the bridge between team members and functional management. The Project Manager (PM)'s ability to manage projects to achieve desired objectives sets him apart from an ordinary project manager (*Nguyen and*

Rukavishnikova, 2013).

Several authors have shown that the role of PM is to ensure that the goals set out are achieved within schedule, budget and meeting the quality requirements: (*Baca*, 2007; *Di Vincenzo*, 2006; *Dunn*, 2001; *Zielinski*, 2005; *Sampson*, 2007; *Drossel*, 1980; *Van Ingen*, 2007) agree that a project manager need to possess interpersonal skills (people oriented skills) and leadership skills. Project success is highly dependent on planning, ability to establish an effective project team and communication/ feedback (*Van Ingen*, 2007).

Gillard (2009) states that the *communication and leadership skills of a project manager are more important than technical skills and further suggests that executive managers should consider selecting a project manager based on these interpersonal skills*.

1.1.2 What Influences Project Outcome?

Traditionally, project success and failure were entirely associated with the ability of the project manager to meet the objectives set out, for instance cost, time and quality. This includes both hard and soft skills. *Prabhakar* (2008) opines that "the competence of the project manager is in itself a factor in successful delivery of projects".

Other researchers such as those listed in Table 1.1 below have described the competencies required from a project manager. Contrary to what research has leaned towards, the Guide to the Project Management Body of Knowledge (PMBoK), (*PMI*, 2014) has identified ten knowledge areas that a project manager should focus on when executing a project. It then becomes clear that by simply focusing on personal competencies, project success can be enhanced and the impact of failure can be reduced (*Ryan*, 2014).

According to *Christensen and Walker* (2004), project success depends largely on the project manager's leadership. *Kerzner* (2006) notes that project failure, which is the inability to meet time and cost objectives, is often due to people-related issues which are discipline, conflict resolution and motivation, among other issues.

A number of authors have identified factors that contribute to project success and

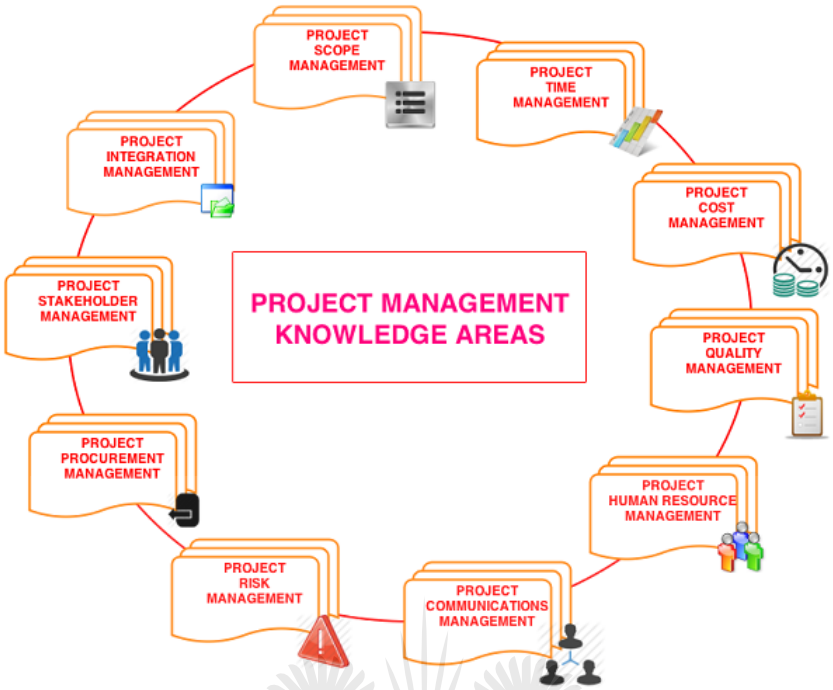

Figure 1.1: PMBoK 10 Knowledge Areas (*PMI*, 2014)

failure as shown below in Table 1.2 and Table 1.3.

Table 1.1: Competencies Required

Author	Competency	What it refers to
Wysocki and Lewis (2001)	General Management	Leadership, Change management, Delegation and Performance Management
Pinto and Kharbanda (1995) *Wysocki and Lewis* (2001) *Briner et al.* (1996)	Interpersonal	Communication, Conflict management, Team Building, Motivation, Problem solving and Relationship management
Toney and Powers (1997) *PMI* (2014)	Project Management Skill	- How to run a project - Use PM Tools and Techniques

Table 1.2: Factors Leading to Project Success

Author	Factors leading to Success
Mullaly (2004)	1. Establish an Environment of trust. 2. Creating transparency of decision making. 3. Creating consistent processes. 4. Ensuring understanding of expectations.
Thamhain (2004)	5. Managing conflicts and problems in projects. 6. Understanding the tasks and roles of project team members.
Day (1998)	7. Close communication and clear concise statement of project objectives.

Table 1.3: Factors Leading to Project Failure

Author	Factors leading to Failure
Mullaly (2004)	1. Failure to define processes and roles. 2. Failure to develop and use a project selection process. 3. Failure to mandate consistent processes. 4. Failure to manage the attainment of organisational outcomes.
Potts (2000)	5. Inability to form teams.
Thamhain (1999)	6. Lack of appropriate leadership.
Day (1998)	7. Lack of communication.

1.2 Problem Statement and Research Question

1.2.1 Problem Statement

The research problem statement is as follows: *Project Managers in the organization are not competent to execute projects.* There seem to be a discrepancy in the project manager's perspective on his/ her competency level and the perspective of his/ her engineering

managers.

1.2.2 Research Question

During the appointment and training of appropriate project managers, employers look for project managers that will be ready to overcome challenges that projects often present. As a result, the chosen competence standard or framework must be in a position to address these challenges that both employers and project managers face.

The research question can thus be formulated using the following two sub-questions:

Q1 - *What is the level of competence of the project managers within the organization?*

Q2 - *What are the senior manager's perception of the project manager's level of competence?*

1.3 Purpose and Motivation of the Study

1.3.1 Purpose

The purpose of this study is to identify the gap in knowledge about project manager and provide a solution to bridge the gap.

1.3.2 Motivation

There are a number of reasons for embarking on this research report. The key ones which are mostly applicable to a non-projectised organization are:

1. Project managers do not have a clear view of the competencies required to effectively manage projects.
2. Project managers are hired on technical experience.
3. Behavioural competences that have to do with leadership and communication skills are not assessed.

The result of doing the above often leads to project failures.

The chief aim of this study is therefore to identify the gap in knowledge of the project manager and to derive solutions to bridge the gap.

1.4 Research Methodology

As *Remler and Ryazin* (2011) describe research as, " a social and intellectual activity that involves systematic inquiry aimed at accurately describing and explaining the world". A quantitative research paradigm will be used as a form of a structured questionnaire. This questionnaire will facilitate the collection of data in a standardized and numerical manner (*Thomas*, 2003; *Denscombe*, 2010).

In terms of deciding how to commence the research, the author considered steps on how to successfully formulate a research questionnaire (*Hogan*, 2011). The steps are shown below:

1. Determine and Define Research Questions
2. Collect data
3. Evaluate and Analyze Data based on collected data
4. Conclusion

The above will be achieved by:

- determining the view of $10 - 16$ project managers on *personal* competence level.
- determining how the respective engineering managers view the actual competence level of each of the $10 - 16$ project managers.
- determining the gap between project manager's personal view of his competency level and that of the engineering manager.
- deriving methods on how to close the gap.

1.5 Definitions of Terms Used

Project Management: - is the disciplined use of processes, tools, and techniques that leads to the accomplishment of a specific objective or set of objectives, which are constrained by time and cost (*Cleland and Ireland*, 2002; *PMI*, 2014).

Project Manager: - is the individual with total responsibility for managing the project, and is also responsible for guiding the project towards the achievement of the agreed objectives (*PMI*, 2014).

Project: - A project is defined as a temporary endeavour undertaken following a particular process: *Initiation, Definition, Planning, Execution and Closure* through the use of human, material and financial resources (*PMI*, 2014; *Crawford*, 2006). It is characterised by a defined scope, is constrained by limited resources and involves people with various skills (*Cleland and Ireland*, 2002). *PMI* (2014) defines a project as a temporary assignment undertaken to bring about a unique service or outcome. *Meredith and Mantel* (2012) on the other hand defines it as a one-time activity with well desired end results. The definition that stands out is by (*Turner and Muller*, 2005), who defines it as a human endeavor which creates change, is limited in time and scope, has mixed goals and objectives, involves a variety of resources and is unique .

Competence: -A number of definitions of competence exists but one that seems complete is by (*Bergland* 1999) which is found in (*Glader*, 2001): "Competence is used to accomplish something". It includes knowledge in all their shapes, but it also include personality traits and abilities, such as social competence, persistence, stress tolerance and so on.

1.6 Chapter Conclusion

The objective of this chapter was to introduce the envisaged work and lay down a foundation for the problem statement. The key attributes of an effective project manager were briefly discussed.

Since the project outcomes are what the organizations are after, it is imperative to know about the factors that affects the outcome. These are the inherent and learned behaviours of the project manager.

Project manager competencies are important and they should form a basis when making appointments of project managers. It therefore becomes important to identify competence levels and gaps if they exists. If it is found that the current competence levels require enhancement, a solution should be identified and implemented.

CHAPTER II

Literature Review

How does a project get to be a year late? One day at a time.

Frederick Brooks

2.1 Introduction

This chapter discusses various literature sources regarding project success, PM's competences, profile, competency models and the influence of competence on the outcome of a project.

2.1.1 Project Management

Project management is defined by (*Kerzner*, 2006) as being a series of tasks that consists of:

- a specific objective with specific outcomes,
- a definite start and finish date,
- funding limits, and
- a process that consumes resources

There are a number of definitions of a project available today and four that are worth mentioning are by (*PMI*, 2014; *Noori and Radford*, 1995; *Meredith and Mantel*, 2012; *Turner and Muller*, 2005).

A project is considered to be successful when there is evidence of good use of resources (time, cost, human, etc.) (*Prabhakar*, 2008). Therefore when a project manager is able to provide planning, organizing and leadership skills over allocated resources, he is considered to be a good project manager (*Prabhakar*, 2008). A project is therefore *an activity that involves sub-activities requiring a variety of resources to yield a successful outcome*.

2.2 Competences in Project Management

2.2.1 Definitions

Competency was investigated by several authors in specific contexts:

i. *Rose et al.* (2007) identified project management competencies in a software development environment by using semi-structured interviews and content analysis with the aim of exploring behaviour in real project management situations.

ii. *Brill et al.* (2007) utilized a Delphi[1] technique with experienced project managers and managed to identify 117 competencies in project management.

iii. *Dainty et al.* (2005) managed to relate project management competence to superior performance in the construction industry. They did this by applying variance analysis in analyzing two groups of project managers divided by superior and inferior performers by an expert panel.

iv. *Grant et al.* (1997) aggregated the analysis of relevant competences by considering specific conditions of the project.

IPMA (2015) defines competence as "the demonstrated ability to apply knowledge and / or skills, and, where relevant, demonstrated personal attributes". Further, competence is described as "a collection of knowledge, personal attributes, skills and relevant experience needed to be successful in a certain function. The standard clearly defines the competences required by individuals involved in project work (*IPMA*, 2015)".

Competences are behaviours that individuals demonstrates when embarking on job-related activities in an effective and efficient manner within an organizational context (*CALL*, 2010). *CALL* (2010) further asserts that competences imply capabilities and ensure successful performance in a long run.

Crawford et al. (2002) and *Boyatzis* (1982) define competence as *a combination of knowledge, skill and personal characteristics.* *Cheng et al.* (2005) found it difficult to identify the key behavioural competencies. However, (*Silvius et al.*, 2012) agrees that despite the difficulty in identifying key behavioural competences, all management competencies which include among others **technical**, **behavioural** and **knowledge** will be more important in the near future.

[1]Delphi technique is a methodology that can be used to identify project risks.

Finally, a definition of competence by (*Parry*, 1998) groups the abilities as *a cluster of related knowledge, attitudes, skills and other personal characteristics that:*

- affect a major part of a project manager's job
- correlate with performance of the project manager on the job.
- can be measured against globally accepted standards.
- can be improved by training and development if a gap is detected.
- can be broken down into dimensions of competence.

2.2.2 Technical and People Skills

Looking at the definitions of competency given in sub-section:2.2.1 from an individual perspective, we can see that competence involves a number of aspects, such as knowledge, skills, experience and values or ethics. The competences can be split into two to make a distinction, namely Hard and Soft competences and this idea was opined by (*Gardiner*, 2005).

2.2.2.1 Hard Competencies

Gardiner (2005) explains that hard competences refer to technical skills while soft competences refers to people skills. The hard competences of technical skills are those that were traditionally taught, for instance planning, estimating and managing a project (*Gardiner*, 2005). However, *El-Saab* (2001) relates technical skills to the ability to understand or comprehend a specialized activity that involves methods, processes, procedures, tools and techniques. This is how traditionally project managers were appointed. They were appointed based on their technical savvy.

2.2.2.2 Soft Competencies

Soft competences are also referred to as human skills (*El-Saab*, 2001). They include interpersonal communication, decision making, problem solving, leadership, motivation and

ability to influence people.

2.2.3 The Impact of Competencies on Project Outcome

The competence model created by (*Crawford*, 2000) separates competency into three dimensions: input, personal and output. Input competencies refer to the knowledge and understanding and the skills and abilities that a project manager brings along in the job. This competency is founded on two pillars, knowledge and skills. The personal competencies refer to the real deep personality traits rooted in the project manager's persona. The output competencies refer to the ability of the project manager to perform the required tasks as per his or her key performance areas.

For a person to be able to manage a project, a certain technical skill or competence is needed. As a project manager, having good organizational skills, self-confidence and proper attitude will equip the PM to manage projects effectively (*Gould and Freeman*, 2004). *Gould and Freeman* (2004) proceeds to say that "technical knowledge is important but coupled with business savvy and ability to lead people, a project manager can go far".

Crawford (2000) notes that "the competence of the project manager is in itself a factor in the successful delivery of projects" and this assertion was later backed by (*Patanakul and Milosevic*, 2009; *Stevenson and Starkweather*, 2010).

A good place to build a competency is by engaging in an experiential learning. Competencies are developed over time and are not inborn, (*Crawford*, 1997). *Crawford* (1997) asserts that the right time to start learning a particular competency is at entry level of new employees. *Barna* (2013) in his research paper acknowledges the competency required from project managers and further expands on what project managers are required to do. They have among other things:

- motivate and sustain people;
- address and solve problems within the team; and
- understand numerous aspects of the business and running a project.

In project management, competence is correlated with performance on the job and can be judged against globally accepted standards. If any improvement is required, training can be easily provided (*IPMA*, 2015).

Fazel-Bakhsheshi and Rashid Nejad (2011) further mention that personality and competence have a greater influence on the success of projects. The authors also point out the importance of deploying an appropriate project manager and identifying the type of project that requires a project manager. *Nahod et al.* (2012) conclude that the perception held by project managers on the importance of competencies differ between successful projects and those that have failed to meet time constraints or budget constraints.

In 2000, *Crawford* (2000) conducted a research and showed that the competency of a project manager is crucial for project success. The odds of successfully completing a project favours a competent project manager rather than an incompetent project manager.

2.3 Competency Models/ Frameworks

Competence is first an individual-based term, but is however not impossible to also talk about organizational competence. One can then refer back to the complete competence of the individuals in the organization, or the stored knowledge concerning systems, techniques or the culture.

In this research, three models or frameworks are closely studied and a suitable model relevant to the South African Industry is adopted and used in further chapters. The three models or frameworks are:

- Project Management Competence Development Framework (PMCDF)
- ICB4
- GAPPS Competence Framework

Figure 2.1 shows that the three models that are discussed have been developed in conjunction with each other. The first framework that was developed is that of Project

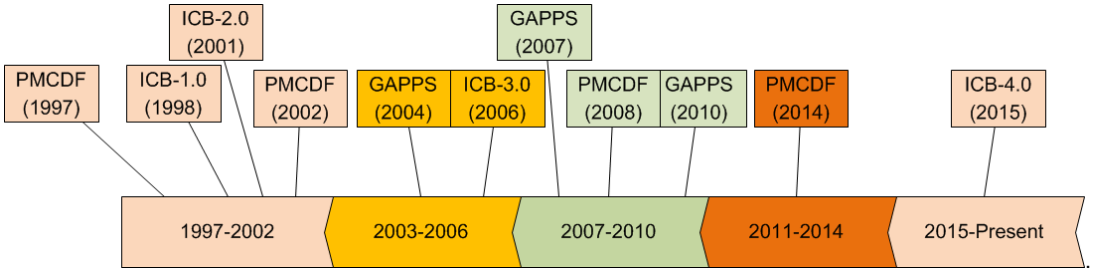

Figure 2.1: Evolution of competency frameworks

Management Institute (PMI), called PMCDF. The first edition seeks to define the performance and personal competencies necessary for a project practitioner to be called competent. The second edition was introduced in 2002 and was developed to give both individual practitioners and their respective employers guidance on how to evaluate, plan and manage the development of a project manager. The latest version was published in 2007.

The International Project Management Association (IPMA) released their competency baseline framework referred to as International Project Management Association Competence Baseline Version 1.0 (ICB1) in the late 90's. Its contents is a combination of various project manager bodies of knowledge from countries such as Britain, France and Germany, all of which are modeled around the Association for Project Management Body of Knowledge (APMBoK) (*Rose*, 2014). The latest version, ICB4, was released in 2015.

GAPPS was developed to set standards for both project and program managers. The first edition of the standard was introduced in 2004, and this was followed by a revised version in 2007 that was specific to project managers. The current edition was introduced in 2011 and it is mainly directed at the performance-based dimension of program managers.

2.3.1 Project Management Competence Development Framework

2.3.1.1 Description

PMCDF was developed by PMI to define successful project manager's competencies. The PMCD framework is founded on the assumption that competences are directly linked to performance. According to (*PMI*, 2014), this framework was designed to bring about or reflect on the three dimensions of competence namely:

Knowledge -: This dimension considers what the individual project manager brings to a project in the form of knowledge and understanding of project management.

Performance -: This dimension considers what the individual project manager is able to demonstrate thus displaying his ability to manage a project successfully.

Personal -: This dimension entails the core personality traits underlying the project manager's ability to carry out a project.

This framework is directly mapped to a PMBoK's knowledge areas in ten directly linked units of knowledge and performance based competencies. PMCDF has six units of personal competencies, which are basically a combination of skills and personal attributes. The elements that are closely related as units are grouped into clusters. The competencies are placed under knowledge, performance and personal dimensions of the framework. However, the knowledge component has been taken out, but is still sanctioned to undergo knowledge test against PMBoK.

PMCD Framework consist of 15 units of competencies as shown in Table 2.1:

2.3.1.2 Environment

In a project environment, PMCDF gathers activities under the umbrella of performance competency by using process groups such as initiating, planning, executing and closing. This framework tends to deal with activities that mostly require leadership skills under the personal competency section.

Table 2.1: PMCDF Units of Competency

1. Integration Management	9. Helping and Human Service
2. Cost Management	10. Cognitive
3. HR Management	11. Time Management
4. Achievement and Action	12. Risk Management
5. Managerial	13. Procurement management
6. Scope Management	14. Impact and Influence
7. Quality Management	15. Personal Effective.
8. Communication Management	

A simple question to ask may be: *How does this framework benefit the employer?* This framework gives a structure of skills, knowledge, understanding and behaviour that is required from project managers to successfully carry out their duty as project managers.

According to (*Carneiro et al.*, 2007), the performance and progress of a project is measured using two indicators during the product's project phase and the final phase, namely. performance indicator, using KPI's and the success indicator, using KSI's.

PMCD framework focuses more on the project management community, which encompasses over 250,000 members of the PMI. It is widely used in USA by the majority of PMI members.

2.3.2 IPMA Competence Baseline-4.0

2.3.2.1 Description

The IPMA introduced a competence model referred to as IPMA Competency Baseline Version 3 in 2006 to deal with the problem of competence within the project management sphere. The latest edition, ICB4 was released in 2015 and it is build on previous editions. It

presents new insights for a broader range of objectives, an audience that includes educators and trainers. ICB4 builds on the previous edition's view of competence and takes it to the next level by redefining the competence elements required by the project manager. There are 29 competence elements spread iover three competence areas as follows:

- **People** competence elements, which defines the personal and interpersonal competences required to successfully achieve the project outcomes.
- **Practice** competence elements, which define the technical aspects of managing projects.
- **Perspective** competence elements are the contextual competences that must be dealt with within the project environment.

The IPMA Competence Baseline is the foundation for the 4 Level Certification (**4-L-C**) for a project manager. The aim of these different levels is to provide a career path at an entry level **D** followed by higher levels of **C**, **B** and the highest of them all being **A**.

The 4 Level Certification (4-L-C) provides the following benefits to the project manager:

- It empowers the project manager to be able to deliver a "*State-Of-The-Art*" service to the customer.
- It awards the project manager an opportunity to possess an internationally recognized certificate.

In assessing the competence level of the project manager, ICB4 uses a scale of **0** through to **10** for knowledge and experience.

It breaks down the project management competencies into 29 elements as shown in Figure 2.2.

IPMA (2015) states that in order for a project manager to be successful, he or she needs to be competent in three areas: People, Perspective and Practice. The people competence is comprised of 10 elements shown in Table 2.2 below.

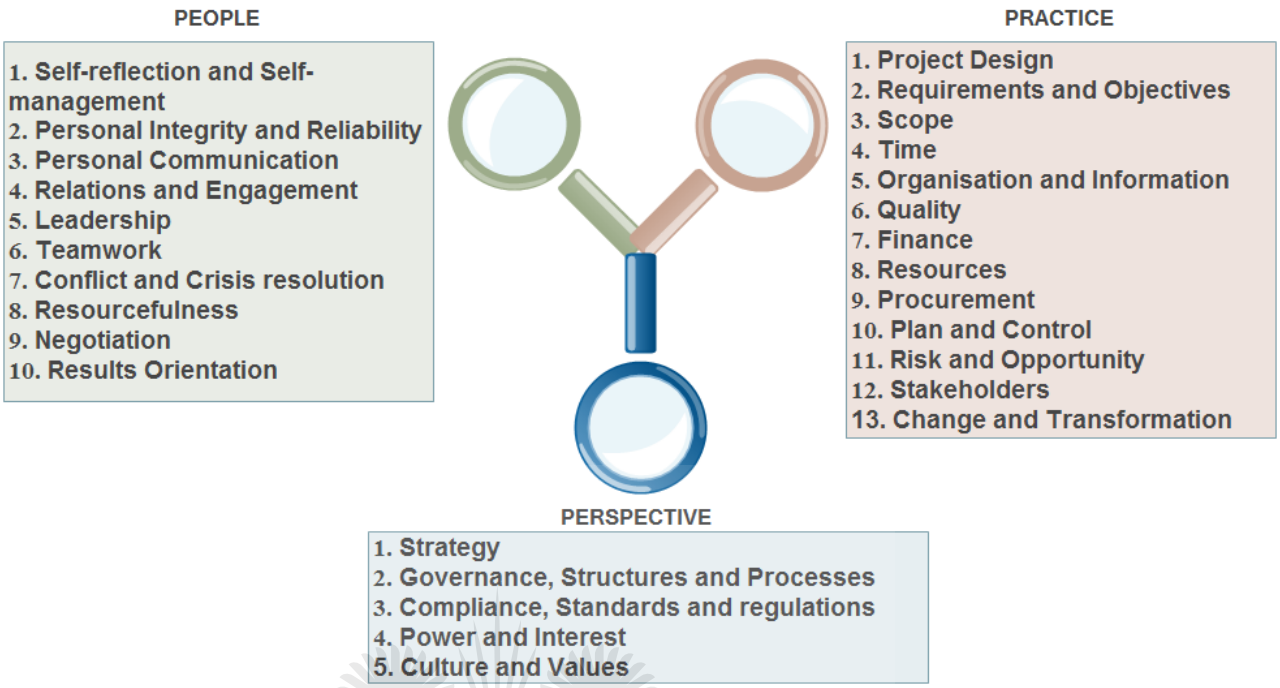

Figure 2.2: Overview of the competences elements (*IPMA*, 2015)

Perspective competence comprise of ten elements shown Table 2.3.

Practice competence comprise of 14 elements as shown in Table 2.4.

2.3.2.2 Environment

The latest version is used widely by individuals and organizations as a framework for assessing and developing project managers. This framework lists 29 competences that are used by a project manager when executing a project.

IPMA (2015) therefore considers an optimum situation in a project as one in which all the people involved in are competent to carry out their respective tasks.

Table 2.2: People Competence Element

People 1	Self-reflection and self management
People 2	Personal communication
People 3	Relations and engagement
People 4	Resourcefulness
People 5	Self-reflection and self management
People 6	Personal integrity and reliability
People 7	Conflict and crisis
People 8	Teamwork
People 9	Negotiation
People 10	Result orientation

Table 2.3: Perspective competence element

Perspective 1	Strategy
Perspective 2	Governance, structures and processes
Perspective 3	Compliance, standards and regulations
Perspective 4	Power and interest
Perspective 5	Culture and values

Figure 2.3 illustrates the "eye of competence" .

Table 2.4: Practice Competence Element

Practice 1	Design
Practice 8	Resources
Practice 2	Requirements, Objectives and Benefits
Practice 9	Procurement and Partnership
Practice 3	Scope
Practice 10	Plan and Control
Practice 4	Time
Practice 11	Risk and Opportunities
Practice 5	Organization and Information
Practice 12	Stakeholders
Practice 6	Quality
Practice 13	Change and Transformation
Practice 7	Finance
Practice 14	Select and Balance

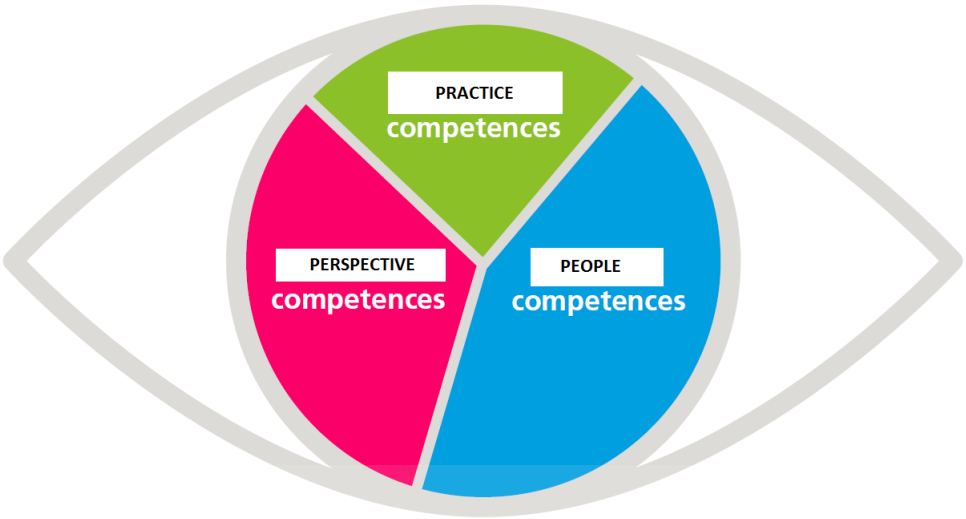

Figure 2.3: Eye of Competence (*IPMA*, 2015)

2.3.3 GAPPS's Competence Framework

2.3.3.1 Description

The GAPPS framework has six units of competencies shown in Table 2.5. The GAPPS framework does not claim to replace previous standards that have been developed primarily for local requirements.

In attempting to define competence, GAPPS uses two premises, namely attribute and performance based. Attribute based competencies refer to personal attributes such as knowledge, skills, etc. whereas performance based competencies refer to work outcomes and performance levels. The GAPPS framework has two levels, level 1 and level 2 which are simply differentiated by the complexity of the project (*GAPPS*, 2010).

Table 2.5: GAPPS Six Units of competence(*GAPPS*, 2010)

Unit No#	Unit Name
Unit No:1	Stakeholder relationship management
Unit No:2	Project plan development
Unit No:3	Project progress management
Unit No:4	Product acceptance/ quality Analysis
Unit No:5	Project transition management
Unit No:6	Project performance and evaluation

2.3.3.2 Environment

The GAPPS document has a minimum number of criteria that any company (big, medium or small) can use as factors in selecting the right project manager. An example of this would be in a small company where everyone knows each other, administration is of less importance.

In the GAPPS document, it is noted that "*an entity that adopts the GAPPS framework should use all of the units, elements, performance criteria* in order to help ensure consistency of application and reciprocity. Additions and modifications can be made as and when appropriate to suit local and regulatory requirements" (*GAPPS*, 2010).

Under their license, *any change to the document can be clearly identified as the work of the author not GAPPS, (GAPPS, 2010).* This literally means that the document can be adopted by any institution or government organizations as their own. Various qualification authorities such as the Department of Employment, Education and Workplace Relations (DEEWR) in Australia, New Zealand Qualification Authority (NZQA), the South

African Qualification Authority (SAQA) and the Qualifications and Curriculum Development Agency, UK (QCDA) have chosen to adopt the performance aspect of competence from the framework (*GAPPS*, 2010).

The GAPPS framework is made up of four keys: units of competence, elements of competence, performance criteria and range statements. Two of the units are shown in Figure 2.4. The rest of the units are shown in Appendix B.

The GAPPS framework utilities a tool called Crawford-Ishikura Factor Table for Evaluating Roles (CIFTER). This tool identifies seven factors that affect the management complexity of a project.

It is all good to display the summary of the units, elements and performance criteria but what does it all mean? As an example, we can take Unit #1 labeled **Manage stakeholder relationships** and refer to Figure 2.5 for more information.

This unit defines the elements required to manage stakeholder relationships during a project. It includes the performance criteria required to demonstrate competence in ensuring the timely and appropriate involvement of key individuals, organizations and groups throughout the project (*GAPPS*, 2010).

2.3.4 Selected Model

The GAPPS model was therefore chosen as the model to be used in the research project. The model was chosen based on the following reasons:

- It provides a reliable source of comparison of project-based standards and qualifications.
- Its members are globally distributed and include standards and qualification bodies, professional associations, government agencies, industry, consulting and training organizations and academic institutions.
- It helps make sense of the many competing project-based standards and qualifications available worldwide.

Figure 2.4: Competency framework by (*GAPPS*, 2010)

The GAPPS model also provides tool sets which include among them tools to:

- compare all major project based standards;
- compare assessments processes for project based qualifications;
- guide project sponsors; and to
- assess relative complexity of projects and programs.

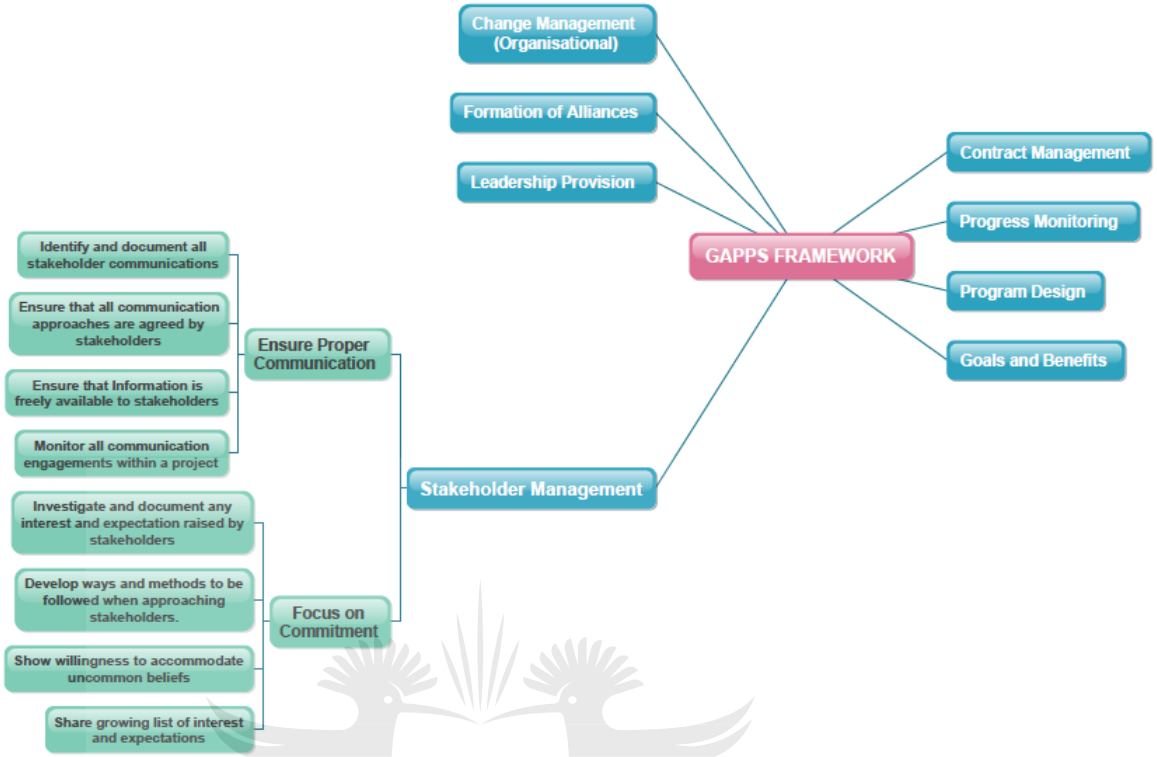

Figure 2.5: Competency framework by (*GAPPS*, 2010)- Stakeholder Management

The GAPPS model aims to include various standards and qualification frameworks. This standard can be used by any organization, government or institutions, with the main aim being to speed up the development of local standards (*GAPPS*, 2010). *GAPPS* (2010) makes reference to South Africa in suggesting that the Services Related Sector of Education and Training Authority (SERSETA) can link its existing standards to the GAPPS framework to enable compatibility of the two systems or standards.

GAPPS (2010) further emphasizes that if any organization or institution opt to adopt it as a standard, all units, elements and criteria must be used. The important thing is that if there are additions or modifications made to the standard, the GAPPS copyleft license

must be evoked.

GAPPS (2011) advocates that a project is considered to be successful if and only if it yields the best outcome, in other words if it meets the client's expectation, it is within budget, it is on time and it is of quality. The performance criteria within GAPPS framework ensures that knowledgeable and skilled project managers are selected to undertake projects.

2.4 Chapter Conclusion

On the basis of the literature review, it is evident that there is still a great need for assessment of competence of project managers. The model chosen is appropriate for assessment in the South African context. As noted in the literature, newly appointed project managers are required to be competent to be able to successfully manage projects. Most of these newly employed PM's start off with little to no exposure to project management and leadership skills, leaving them vulnerable. They continue in their comfort zone since they are technically skilled, neglecting the fact that they are now expected to supervise and manage other resources in their projects.

Various models have been cited, discussed and the GAPPS model was chosen as the best model to explore the competence levels of project managers. The study focuses on this model and the six unit of competences that it offers are used to assess the level of competence.

This will ensure that the appointment of project managers will no longer be on the basis of technical competence alone, but rather on behavioural competencies as well.

CHAPTER III

Research Methodology

Project Managers are the most creative professionals in the world; we have to figure out everything that could go wrong before it does.

Fredrick Haren

3.1 Introduction

This chapter presents the research methodology of this research study. It further describes the company in which the study was conducted, the study design, the population sample and the instrument used for data collection, which includes the methods applied to ensure reliability of the instrument.

The aim of this chapter is to describe the method of data collection, presentation of results and interpretation of the answers given by respondents.

3.2 Research Strategy

There are quite a number of research strategies that have been used over the years, including **case studies, surveys, ethnography, grounded theory and action research** (*Thomas*, 2003; *Walliman*, 2005; *Taylor et al.*, 2006; *Hoefstee*, 2006; *Biggam*, 2011). This study only discusses the widely used strategies will be discussed, namely case studies, surveys and experimental research all of which are described in Table 3.1.

3.2.1 Case Study

3.2.1.1 Advantages

Some of the advantages of a case study are:

- It focuses on one specific instance which allows the researcher to deal with the intricacies of the studied phenomena.
- It promotes the use of multiple data sources, which facilitates validation.
- It works well with small-scale research as the research effort is concentrated on one research location.

Table 3.1: Research Strategies (*Thomas*, 2003; *Hoefstee*, 2006; *Walliman*, 2005; *Taylor et al.*, 2006)

Research strategy	Description
Case study	It provides an in-depth investigation of phenomena in their natural setting. It's objective is to explain relationships and social processes pertaining to a specific entity such as an organization. Data can be collected through focus groups, interviews, questionnaire and documentation.
Surveys	A survey focuses on obtaining a wide and comprehensive view of a particular phenomena, e.g. Gaining a holistic view of what constitutes project success factors and the factors that influences it. It primarily acquires data at a particular moment in time and often express the data in numerical format. It can be employed by both qualitative and quantitative research paradigms.
An experimental Research	Experimental research emphasizes empirical examination within a controlled environment. It investigates the relationships and Experimental properties of specific causal factors. A researcher manipulates the independent variable and observes the change effect on the dependent variable. It is important to isolate and control all possible conditions which determine the events being investigated.

3.2.1.2 Disadvantages

- Case studies do not naturally permit generalization since the results obtained are specific to an entity.
- They are considered to produce soft data as the results based on interpretive methods rather than statistical methods.

3.3 Case Study Process

In this section, a modified case study process shown in Table 3.2 is employed.

Table 3.2: Modified case study protocol framework (*Yin*, 2003), (*Maimbo and Pervan*, 2005)

Activity	Sub-activity
1. Background	1.1. Identify main research question 1.2. Background of the study 1.3. Background of the company
2. Design	2.1. Identify the method to be used (single, multiple, embedded or holistic design)
3. Case selection	3.1. Criteria for case selection
4. Study population	4.1. Criteria for population selection
5. Data Collection	5.1. Define data collection tool 5.2. Define a data collection plan
6. Data analysis	6.1. Identify a Criteria for analyzing data 6.2. Interpretation of data 6.3. Research limitations

3.3.1 Background Study and Company

3.3.1.1 Research Question

The aim of our study was to investigate the level of competence of project managers within the organization and to determine the perception of senior managers regarding the level of project managers' competence. Based on the research problem, the research questions were noted as follows:

Q1 What is the level of competence of the project managers within the organization?

Q2 What are the senior manager's perception of the project manager's level of competence?

The above are the fundamental research questions that the study aimed to answer by using the questionnaire as the primary source of data collection.

3.3.1.2 Study

In chapter I, ten knowledge areas were briefly introduced as being essential when executing any project (*PMI*, 2014). The model that was selected from literature, the GAPPS identified six units of competence that should be in place when executing a project (*GAPPS*, 2010). Table 3.3 shows exactly the competencies that will form a basis of the questionnaire.

3.3.1.3 Company

The company that the study was conducted at manufactures, supplies and distributes a wide variety of industrial and specialty gas products and chemicals in the southern africa region. The company was founded in 1969 and is now the largest supplier of on-site and pipeline market and is a leader in bulk, packaged gas and chemicals supply markets.

Safety and quality are key strategies and operational elements for the company. The company is accredited with ISO 9001: 2008 for quality management systems in all its

Table 3.3: 10 knowledge areas + 6 units of competencies

10 Knowledge Areas	Six units of competence
Project integration management	Project transition
Project cost management	Project performance irto
Project procurement management	Cost activities
Project stakeholder management	
Project communication management	Stakeholder management
Project human resources management	
Project Time Management	Project progress
Project Scope Management	Project plan development
Project quality management	Project product
Project risk management	Acceptance

facilities in South Africa.

Thecurrent organizational structure for the Central Services Department is shown in Figure **??**fig:org1. There are other departments such as Facilities, Chemicals and On-sites which also have project managers and engineers. In total, there are 16 project managers and engineers in the company. Figure **??**fig:org1 shows an organogram consisting of two Engineering Managers and six direct reports. The central services department is made up of two engineering managers, but there are also other departments which are headed by senior managers with project managers as direct reports. In total, the number of senior managers is four.

3.3.2 Design

Research design is the plan and structure according to which a researcher wants to gather information to answer the research questions (*McMillan and Schumacher*, 1993). *Yin* (2003) purports that research design is a clear sequence of events that connects gathered data to the research question.

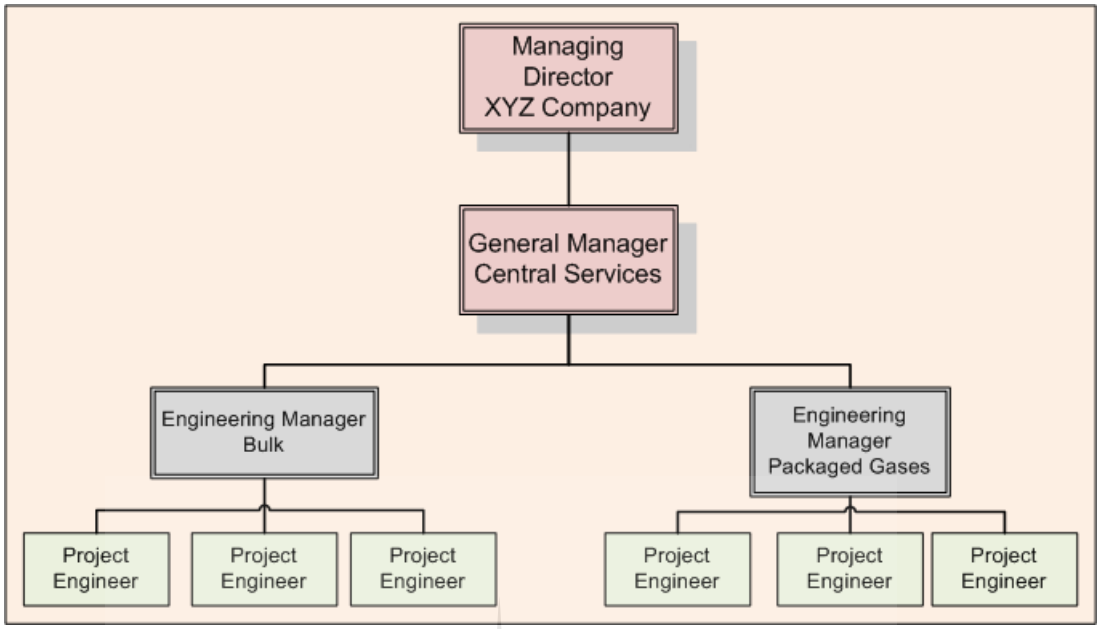

Figure 3.1: Current organizational diagram

The research attempts to determine if the PM's in the specific organization are competent to execute projects. Therefore an in-depth understanding of the PM's competence level in this organization is required. A case study provides an in-depth investigation (*Yin*, 2003).

Therefore, a case study method was selected as it enables an in-depth study of a particular circumstance in our case the lack of competences from project managers as well as the perception of senior managers on the competencies of their direct reports.

The next section shows available case study methods that a researcher can implement. In this study a single case method was adopted.

Table 3.4: Types of Cases (*Yin*, 2003)

Research Strategy	Description
Explanatory	This type of case study would be if you were seeking to answer a question that sought explain the presumed causal links in real life interventions that are too complex for the survey or experimental strategies. In evaluation language, the explanations would link program implementation with program effects.
Exploratory	This type of case study is used to explore those situations in which the intervention being evaluated has no clear, single set of outcomes.
Descriptive/ Single case	This type of case study is used to describe an intervention or phenomenon and the real-life context in which it occurred.
Multiple case studies	A multiple case study enables the researcher to explore differences within and between cases. The goal is to replicate findings across cases. Comparisons will be drawn and it is important that the cases are chosen carefully so that the researcher can predict similar results or predict contradicting results based on a theory.

3.3.3 Case Selection

There are different types of case study methods from which the researcher can select as shown in Table 3.4.

The chosen case study was a single-case study approach, also known as descriptive case approach.

3.3.4 Population

There are approximately 16 project managers in the company. These project managers were requested to partake as the study population. It was thought that their input will provide a view of their individual competences. However, in order to evaluate the individual project managers' opinion on their competences, the senior managers to which the 16 project managers reports were also included to obtain a general view on project manager's competence. The number of senior managers overseeing the project work within the company is four.

In simpler terms, a population consists of all the subjects to be studied. Therefore, a targeted population can be described as *"the group or individuals to whom the questionnaire applies, i.e. people who are in a position to respond to the questions as well as to whom the results of the questionnaire apply"*.

There are four business units that each has a senior manager with project managers/engineers as their direct subordinates. In Figure 3.1, only two business units are shown.

3.3.4.1 Unit of Analysis

Babbie (2011) mentions that during the conducting of the research, "there are no restrictions on what or who can be investigated" and (*Walliman*, 2005) confirms that "research must only be concerned with the data that is applicable to their particular research problem".

Babbie (2011) refers to objects of study as the unit of analysis or units of observation. The important thing is for the researcher to identify this unit before conducting the research because these units provide guidelines to the data being gathered.

The unit of analysis in our research are:

1. The competence of the project managers within the organization.

2. The senior manager's perception of the project manager's level of competence.

3.3.5 Data Collection Tool and Plan

There are many ways to collect data in a case study. To remove the research personal bias as a project manager in the organization only an objective tool was be used.

3.3.5.1 Data Collection Tool

Structured questionnaires were used in the study as the data collection tool. The questionnaire was sent out to 16 project managers and four senior managers.

This method was used to identify the individual differences and perceptions of the participants, their attitudes, current and previous behaviour. It further sought to examine the facts and characteristics of a particular population in a systematic manner. It is the most applicable method considering the fact that competencies of project managers is unclear in this company.

The questionnaire method was used for the following simple reasons (*Welman and Kruger*, 1999):

1. It is cheaper to use.
2. It is easy to distribute and collect
3. The participants mostly have a pen and pencil to complete the questionnaire
4. Much lot of information can be collected within a short time
5. Participants can be anonymous
6. The answering of questions can be kept impersonal
7. It ensures standardization and comparability of the data across respondents, thus increasing the speed and accuracy of recording and provides a good platform for data processing

A structured questionnaire is based solely on closed-ended questions which produces data that can be analysed quantitatively. Quantitative research is defined as *"the nu-*

merical representation and manipulation of observations for the purpose of describing and explaining the phenomena that those observations are made" (Sukamolson, 2010). Neuman (2000) describes a closed-ended questions as being a question that asks a question and give the participant fixed responses to choose from. The responses are based on the 5-point Likert Scale as recommended by (*Emory and Cooper*, 1991). They say that "the scale is relatively easy to develop and focuses on presenting a set of attitude statements." The participants were requested to express their level of agreement or disagreement on a 5-point scale. Each level of agreement is given a numerical value ranging from one to five as follows: Never (1), Rarely (2), Sometimes (3), Often (4) and Always (5).

The questions on project management competence in the questionnaire were derived from the GAPPS model.

The information that the research sought to find revolved around the following:

1. Data required on project manager competence
2. Structured questions on:
   (a) View 1: PM's view on his or her personal competence.
   (b) View 2: Manager's view on the PM's competence.

The questionnaire began with information on the study intent and then continued to ask basic questions on the biographical profiles of the participants, which includes education level, types of projects managed, current position and the level of project management experience. These questions were all in the form of multiple choice with an option of manual entry if the respondent did not fall into any one of the presented multiple choice category.

The next set of questions were based on the GAPPS competence model and were aimed at testing the level of competence of the project managers. The main aim of these questions was to compare the responses obtained from various project managers with those of their senior managers.

Refer to Appendix B for the questionnaire.

3.3.5.2 Data Collection Plan

1. Both the project managers and senior managers will be given a questionnaire to complete via email. Since the form is in the format of a pdf, the participants will be required to print the questionnaire and complete it manually. When the questionnaire has been completed, it can be scanned and emailed through to the researcher or can be internally couriered.
2. Data will be captured and analysis done on MS Excel.

3.4 Data Analysis

3.4.1 Criteria for Analyzing Data

The results from Questions 1-7 were treated independently as this data were demographic. Their responses were converted to a percentage format to see the distribution of the different options presented in other questions.

The sections on unit of competencies were dealt with as presented in the questionnaire and were be ranked based on the combined average to determine which level most project managers are on.

In order to achieve the objective of the research, the units of competence developed by the GAPPS model were incorporated in the questionnaire will be used.

This study examined the level of competence of PM's and the perception of the senior managers regarding the PM's competence level.

3.4.2 Data validity and reliability

Riege (2003) suggests that the researcher is required to observe the four design tests when designing a questionnaire, namely construct validity, internal validity, external validity and reliability.

In order for us to test the validity of the completed questionnaire, the data were checked to ensure a high quality measure. As a guideline, the reliability of the questionnaire which is the degree of consistency, was checked against the attribute it was designed to measure. According to (*Polit and Hungler*, 1995), "reliability is equated to the stability, consistency or dependability of a measuring tool."

The objective was to establish how project managers view their competence in relation to the model selected and what the perceptions of senior managers were regarding the project managers' level of competence.

3.4.3 Research Limitations

There are two limitations to this research that could lead to sampling error and data becoming insignificant for analysis:

1. All respondents were selected from one company.
2. Non-response bias from the population.

3.5 Chapter Conclusion

- The first objective of this chapter was to explore the concept of research design. This process focuses on transforming a research question into a research project.
- The second objective was to explore the data collection technique, which in this case was a structured questionnaire.
- This chapter has managed to discuss the rationale behind the questionnaire design and treatment of data.

The next chapter focuses on the presentation and interpretation of the data collected from questionnaires.

CHAPTER IV

Analysis and Interpretation of Results

Time and space are fragments of the infinite for the use of finite creatures.

Henri Frederic Amiel

4.1 Introduction

This chapter introduces the data collected and the data analysis so that a comparison can be made and the gaps on competence can be identified from the results. The aim of this chapter is to answer the two questions posed.

The data were interpreted in a descriptive form based on the results of the questionnaire.

Data will be interpreted in a descriptive form based on the results of the questionnaire.

4.2 Results

Out of a total of 20 questionnaire distributed, only 16 completed questionnaire were received back. This represent an 80% response rate, which is made up of 75% (i.e. 12/16) project managers/engineers and 100% senior managers (i.e. 4/4).

There is no direct relationship between the biographical data and the research questions posed. However, the answers to the demographic questions would be useful in providing a better understanding of the analysis of the study results. The data gathered is considered relevant because it is from project managers and employees of the company who are responsible for running various projects.

The first section of the questionnaire was aimed at profiling the respondents and it consisted of seven questions.

4.2.1 Biographical Information of Respondents

In this section, the profile of the respondents was discussed based on the attributes such as **level of education**, **level of experience**, **job satisfaction** and **project type** managed. They are used to profile the respondents to ensure that they are active project managers and senior managers in the organization.

The discussion will make reference to the following tables, Table 4.1 and 4.2 to discuss

the findings.

Table 4.1: Respondents profile summary

Number of participants				**16**
		PM	SM	%
What is your level of education?	Matric	1	0	6
	Diploma	3	0	19
	Bachelor	6	2	50
	Masters	2	2	25
	Phd	0	0	0
Total		**12**	**4**	**100**
Representation	Project Manager	12	0	75
	Senior Manager	0	4	25
Total		12	4	100
What is your level of experience?	1-2 years	0	0	0
	3-6 years	8	1	56
	7-11 years	1	0	6
	12-25 years	1	2	19
	26-years plus	2	1	19
Total		12	4	100
Are you a holder of PM Certificate?	Yes	4	1	31
	No	8	3	69
Total		**12**	**4**	**100**

The respondents profile indicates that the data collected represents both project managers/engineers in the organization and senior managers, whose main responsibility is to manage their subordinates.

Table 4.2: Respondents profile summary

Number of participants				16
		PM	SM	%
Project Type	Small	0	0	0
	Medium	7	1	50
	Complex	4	1	31
	Large	1	2	19
Total		**12**	**4**	**100**
Level of satisfaction	Not at all	0	0	0
	slightly	1	0	6
	moderately	4	2	38
	very	6	2	50
	extremely	1	0	6
Total		**12**	**4**	**100**

4.2.1.1 Educational attainment of the Respondents

The respondents were asked to indicate their level of education. The results indicate that most of the respondents are university graduate. Six respondents indicated that they were educated up to diploma level. A total of eight respondents, representing 50%, are in possession of a bachelor's degree as their highest level of education. Only four respondents were found to be educated to masters degree level. A fair amount of respondents are well educated.

The diversity of the population was further confirmed when the respondents were asked regarding the type of projects they have and are currently managing in subsection 4.2.1.4. The responses gathered in that section illustrate the maturity of the respondents, particularly in terms of experience.

4.2.1.2 Length of stay in the organization

The respondents were asked about the experience they have working as project managers. It was noted that half of the project managers have 3-6 years of experience. The remaining respondents have more than six years experience. From this, it can be concluded that the project managers are experienced. Three senior managers have more than twelve years of experience so their input can be acknowledged as important in as far as their perception of the competence level of their direct subordinates are concerned.

4.2.1.3 Project management certification

Regarding whether they are certified practitioners, the respondents were asked to indicate if they hold a certificate in project management. Eleven (11) out of sixteen respondents have indicated that they are in possession of a project management certificate.

4.2.1.4 Types of project managed

The respondents were further asked to select the type of projects they have worked on. Eight respondents have worked on medium type projects and 31% have worked on complex type projects. In general, the respondents are involved in projects ranging from medium to large in terms of scope, risk and cost.

Lastly in this section, respondents were asked to rate their level of satisfaction working in the organization. Eight respondents declared that they are very satisfied with their roles and 38% said that they are moderately satisfied.

The following section discusses the competence levels of each of the project manager/engineer and employees who are responsible for some project work.

4.3 Project managers competence data

4.3.1 Introduction

The second section looked at competencies of project managers as per the GAPPS competence model. This section contains statements on diverse variables being investigated under each element of competence. The responses to the statements were in the form of a 5-point Likert scale, where 1 = Never, 2 = Rarely, 3 = Sometimes, 4 = Often and 5 = Always.

The GAPPS competence model was used to evaluate each project manager competence. A Likert scale was used to measure each respondents opinion about his/her competence. In order to develop a summated rating, the final scaling was obtained by using item analysis,in other words each item getting subjected to a measurement of its discriminative power (*Robson*, 1993). A Likert scale of 5 indicates that the task is always executed as per GAPPS model and a scale of 1 indicates that the task is not executed at all, indicating a low level of competence of the project manager or engineer. This model comprises of six units of competencies:

1. Stakeholder relationship management
2. Project development plan
3. Managing project progress
4. Managing product acceptance
5. Managing project transition
6. Evaluating and improving project performance

4.3.2 Method of calculation

The highest and lowest potential score per element of each competence is determined as follows:

- there were 12 project managers/engineers. This total number was multiplied by the highest Likert scale of 5. Therefore the highest potential score per element is $12 \times 5 = 60$. The lowest potential score per element is $12 \times 1 = 12$.
- there were 4 senior managers. This total number gets multiplied by the highest Likert scale which was 5 or by the lowest Likert score of 1 to obtain highest and minimum scores. Therefore the highest potential score per element is $4 \times 5 = 20$. The lowest potential score per element is $4 \times 1 = 4$.

When compiling the total scores for each of the respondents, a weighted total was calculated based on the number of responses for each question and the Likert scale indicated, see Equation 4.1. A mean score is then calculated for each group by using the total number of respondents in the group, i.e. project manager's total number is 12 and senior manager's total number is four, see Equation 4.2.

The scores are then ranked from lowest to highest. The top three scores that are low are discussed further because they indicate that tasks are not performed best.

$$\text{Weighted Total (WT)} = \mathbf{1} \times n_1 + \mathbf{2} \times n_2 + \mathbf{3} \times n_3 + \mathbf{4} \times n_4 + \mathbf{5} \times n_5 \tag{4.1}$$

$$\textit{Weighted Mean (WM)} = \frac{1 \times n_1 + 2 \times n_2 + 3 \times n_3 + 4 \times n_4 + 5 \times n_5}{\text{NR}} \tag{4.2}$$

where the number denotes the elements contained in the table.

The above mathematical formulation allows the ranking of the scores to be presented in a descending order of their relative importance index, in other words from lowest to highest (*Robson*, 1993).

Table 4.3: Weighted Score Calculation (*Robson*, 1993)

n_1	number of respondents for 'never'
n_2	number of respondents for 'rarely'
n_3	number of respondents for 'sometimes'
n_4	number of respondents for 'often'
n_5	number of respondents for 'always'
NR	Number of respondents
Weighted Score	Weighted total score
Weighted Mean	Weighted mean score-PM (÷ 12) and SM(÷ 4)

4.3.3 GAPPS unit of competence and result discussion

4.3.3.1 Stakeholder relationship management

Description

The questions on this unit of competence were aimed at determining how knowledgeable the project manager is regarding this element. The stakeholder relationship management is regarded as a method of identifying, analyzing and planning ways of communication, negotiating and influencing stakeholders (*Gould*, 2012). These are people with vested interest in the project and are impacted both positively and negatively by the outcome of the project (*Gould*, 2012). The aim of this unit is to address the following important points (*GAPPS*, 2011):

- Ensure that stakeholder interests are identified and addressed.
- Promote effective individual and team performance.
- Manage stakeholder communications.
- Implement actions agreed with stakeholders.

Discussion

The analysis assumes that a score of 3.5 and higher indicates that project manager's performance on the task is acceptable whereas a score of less than 3.5 indicates that the project manager's performance on the task is unacceptable (as shown in Figure 4.1). The attitudinal responses related to Likert scale were recorded and can be found in appendix A, Table 4.4. All project managers participated in answering the questions under this unit of competence.

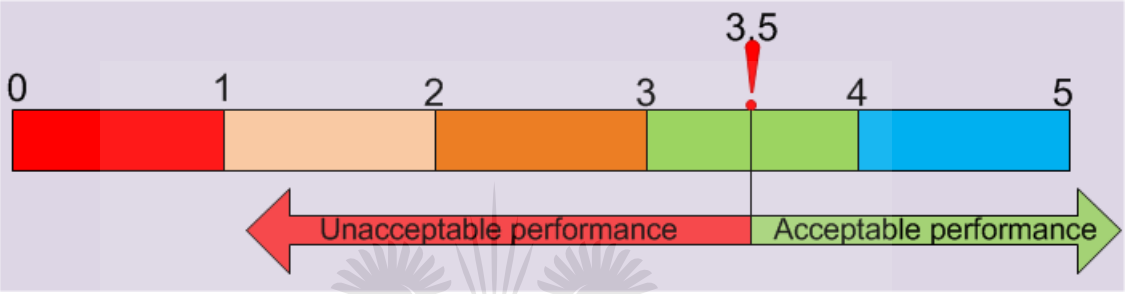

Figure 4.1: Performance scale

A further analysis was done to gain a deeper understanding of the data. A score was calculated from Table A.1 and these scores were recorded and ranked in Table 4.4 from Lowest to Highest.

The lowest three scores recorded are tasks represented by questions 9 (3.1), 4 (3.1) and 7 (3.5) respectively. A score of 3.1 indicates that project manager's level of performance is unacceptable. Therefore the task represented by Q7 with a score of 3.5 indicates that the level of performance by project managers is acceptable and therefore will not form part of the lowest scores. In this unit, only two tasks represented by questions 9 and 4 were thus found to indicate competence gap of the project managers.

Morris and Baddache (2012) confirm that implementing actions agreed upon with stakeholders is key and they further advise that an action plan for each output which takes

into account concerns and perceptions of stakeholders as expressed during the stakeholder engagement in the plan. Not documenting and implementing actions affects the outcome of a project because the efforts set out on future activities to address the concerns raised by stakeholders cannot be mapped with the result of the project (*Morris and Baddache*, 2012).

Table 4.4: Responses with lowest-high rankings

Unit 1-Stakeholder relationship management Questions	Weighted Total-PM	Weighted Mean-PM	Rank Scores
Q9- Development needs recognized	37	3.1	1
Q4- Actions are implemented	39	3.3	2
Q7- Expectations are determined	42	3.5	3
Q2- Stakeholder interests are investigated	43	3.6	4
Q8- Performance is monitored	43	3.6	5
Q5- Interpersonal skills are applied	45	3.8	6
Q6- Roles are defined and documented	47	3.9	7
Q1- Stakeholders are determined	49	4.1	8
Q3- Stakeholder interests are considered	50	4.2	9
Average weighted mean score		3.7	

4.3.3.2 Project development plan

Description

A development plan is simply a process that shows what should be delivered and reach this goal is identified and defined. This plan ensures that whatever the project includes or excludes is captured and planned for. It combines all project plans for a project. Its main purpose is to document information regarding the planning process and to provide a reference document (*GAPPS*, 2011).

It is therefore the responsibility of the project manager/engineer to completely take ownership of this process. The questions in this unit seek to evaluate the project manager's

competence level and experience.

Discussion

The score for project manager's responses was recorded in Table A.2 and it indicates the level of competence of the project managers during the execution of the project development plan. All project managers participated in answering the questions under this unit of competence.

Further analysis was done to get as much information as possible from the data gathered and a score was calculated in Table 4.5. In the same table, the rankings from low to high were indicated. As can be seen in the table, the lowest three scores were identified as tasks represented by questions 9 (3.3), 4 (3.6) and 11 (3.6). As can be seen in the table, only the task represented by question 9 with a score of 3.3 was considered to be the task in which the level of performance by project managers is unacceptable.

Risk evaluation was found to be one of the task that showed a gap in competence by project managers. The manner in which a task is performed, for example, ensuring that performance of risk activities is done, is directly proportional to the outcome of the project (*Ibbs and Kwak*, 2000). An article by (*Ibbs and Kwak*, 2000) first flagged risk evaluation as being a decider in the success or failure of project in the early 2000. Seven risk management processes were proposed by (*PMI*, 2008), namely "risk management planning, risk evaluation, risk identification, qualitative and quantitative risk analysis, risk responses planning, risk monitoring and risk control."

4.3.3.3 Managing project progress

Description

Managing project progress is crucial towards having a successful outcome of a project. Failure to focus on this unit brings about uncertainty regarding when the project will be

Table 4.5: Responses with low-high rankings

Unit 2-Project development plan Questions	Weighted Total-PM	Weighted Mean-PM	Rank Scores
Q9- Risks are evaluated	40	3.3	1
Q4- Assumptions, exclusions are known	43	3.6	2
Q11- Project success criteria is determined	43	3.6	3
Q12- Project success criteria is agreed to	44	3.7	4
Q10- Response to risks documented	45	3.8	5
Q7- Potential conflicts identified	46	3.8	6
Q5- Lessons learned are documented	47	3.9	7
Q8- Risks are identified High Level Risk Assessment (HIRA)	48	4.0	8
Q1- Project outcome agreed to	48	4.0	9
Q2- Processes are identified	49	4.1	10
Q14- Schedule is developed	49	4.1	11
Q15- Budget is developed	49	4.1	12
Q16- Conflicts are addressed	49	4.1	13
Q17- Plan is approved	49	4.1	14
Q3- Work items are determined	50	4.2	15
Q13- Resource requirements determined	50	4.2	16
Q6- Legal requirements are determined	52	4.3	17
Average weighted mean score		3.9	

completed. This process requires a project manager who is disciplined and has strong organizational skills.

The questions asked on this unit seek to evaluate the project manager's level of competence and experience on it.

The unit addresses the following:

- Monitoring, evaluating and controlling the project performance.
- Monitoring the risks that the project has assumed.
- Reflecting on practice.

Discussion

Table 4.6: Responses with low to high rankings

Unit 3- Managing project progress Questions	Weighted Total-PM	Weighted Mean-PM	Rank Scores
Q1- Project outcome agreed to	43	3.6	1
Q9- Feedback on personal performance	43	3.6	2
Q10- Lessons learned are documented	43	3.6	3
Q2- Processes are identified	44	3.7	4
Q6- Changes to external environment monitored	44	3.8	5
Q5- Risks are monitored	46	3.8	6
Q7- Legal requirements are determined	46	3.8	7
Q3- Work items are determined	48	4.0	8
Q4- Corrective action is taken	48	4.0	9
Q8- Actions are taken	49	4.1	10
Average weighted mean score		3.8	

In Appendix A, Table A.3 shows the scores for all the questions within this unit of competence. All the project managers participated in answering the questions.

In order to get a deeper understanding of the data from the participants, further analysis was conducted based on the scores and scores were ranked from low to high as can be

seen in Table 4.6 was done.

The lowest three scores are recorded for tasks represented by questions 1 (3.6), 9 (3.6) and 10 (3.6) in which all three tasks were scored the same. When looking at the average scores of the project managers in all the ten tasks within this unit of competence, it can be clearly seen that the average score is above 3.5. This indicates that the project manager's performance is acceptable.

The impact due to lack of feedback on performance of team members by project managers is accompanied by dissatisfaction and the outcome of the project is negative (*Mullins*, 2005).

4.3.3.4 Managing product acceptance

Description

The acceptance criteria includes performance requirements and important conditions that must be met before the project can be accepted as being successfully completed. These are criteria against which a project is measured that can be demonstrated to the clients that the work is complete.

The project manager must document the acceptance criteria in the requirements document and project scope statement.

The aim of the questions within this unit is to evaluate the level of competence and experience of the project manager.

This unit according to (*GAPPS*, 2010) ensures that the following items are addressed:

- The relevant legal requirements of the project are identified.
- The risks and responses to the identified risks in the project are adequately dealt with.
- The success criteria of the project is clear.
- The development and integration of the project baselines is intact.

Discussion

In Table A.4 from Appendix A, the responses from project managers were recorded. All project managers participated in answering the questions under this unit of competence.

Table 4.7: Responses with low to high rankings

Unit 4- Managing product acceptance Questions	Weighted Total-PM	Weighted Mean-PM	Rank Scores
Q4- RoC of product documented	44	3.7	1
Q3- Final product evaluated	46	3.8	2
Q6- Variances identified	46	3.8	3
Q2- Characteristics agreed to	48	4.0	4
Q7- Final product is handed over	49	4.1	5
Q5- Changes are implemented	50	4.2	6
Q1- Desired characteristics identified	51	4.3	7
Average weighted mean score		4.0	

This unit of competence as shown in Table 4.7, has three lowest scores above 3.5. These tasks are represented by questions 4 (3.7), 3 (3.8) and 6 (3.8). As can be seen in the table, there are no scores below 3.5, hence all of the tasks within this unit were performed acceptably by project managers. Even the lowest scores are actually being performed acceptably by project managers. None of the scores recorded can be discussed further because the performance of project managers on the tasks is acceptable hence there are no gaps on their competence on this unit.

4.3.3.5 Managing project transition

Description

A project transition plan is basically a document that outlines the processes to be followed during the implementation stage of the project. After each task has been completed,

the project team cannot just present the completed stage of the project and walk-away, they are required to provide a thorough plan for the implementation of other stages (*GAPPS*, 2010).

This process involves the following tasks:

- Identification of the key project members.
- Logistics considerations if there are any.
- The transfer of knowledge (training of the users of the system).
- Detailed schedules and plans for the implementation.
- Identification of risk factors.

Discussion

Appendix A, Table A.5 displays the project manager's responses to questions within this unit. All project managers participated in answering the questions within this unit of competence. There were no responses recorded on Likert scale 1 and 2 options.

In order to get a deeper understanding of the data from the participants, further analysis was conducted based on the scores and the ranking of the scores from low to high was done as can be seen in Table 4.8.

The lower three scores recorded are shown in Table 4.8 and are from tasks represented by questions 1 (4.3), 3 (4.3) and 4 (4.3). Although, the lower three scores were designed to show the negative responses, in other words, unacceptable performance, performance level on the tasks by project managers was acceptable. Therefore there are no gaps in competence in this unit from project managers and as such the scores will not be discussed further.

I

The impact of not performing the tasks indicated by questions 1, 3 and 4, i.e. Failure to get authorization for resources or getting outputs of prior phase accepted by stakeholders will eventually lead to certain project objectives not being met (*Briner et al.*, 1996; *Bourne*,

Table 4.8: Responses with low to high rankings

Unit 5- Managing project transition Questions	Weighted Total-PM	Weighted Mean-PM	Rank Scores
Q1- Stakeholder authorization for resources	52	4.3	1
Q3- Outputs of prior phase accepted	52	4.3	2
Q4- Permission to start work is obtained	53	4.4	3
Q2- Start-up activities are planned	55	4.6	4
Q6- Closure activities are planned	55	4.6	5
Q7- Project records finalized	56	4.7	6
Q5- Transition activities are planned	56	4.7	7
Average weighted mean score		4.5	

2006). However, as indicated previously there was no score that is below 3.5, hence no gaps in this competence by project managers.

4.3.3.6 Evaluating and improving project performance

Description

Performance can be defined as the way people do their jobs and the results of their work. When a performance factor is missing, a gap in performance is evident hence an intervention is required.

It is through monitoring and evaluation that the team is able to ensure project readiness by measuring the change in performance gaps that are identified during gap analysis.

The aim of this unit of competence is to evaluate the project manager's competence level and experience on it.

This unit ensures that the following important points are addressed:

- Project evaluation plan is developed.
- The project is evaluated in accordance with the plan.
- Information is captured and lessons learned are documented for the next project.

Discussion of the results

Table 4.9: Responses with low to high rankings

Unit 6- Evaluating and Improving Project Performance Questions	Weighted Total-PM	Weighted Mean-PM	Rank Scores
Q3- Performance data is collected	36	3.0	1
Q6- Results of evaluations are documented	37	3.1	2
Q2- Evaluation technique determined	38	3.2	3
Q4- Evaluation process involves S/H	41	3.4	4
Q7- Potential improvements identified	42	3.5	5
Q1- Criteria of evaluation is determined	43	3.6	6
Q5- Ensure knowledge sharing	44	3.7	7
Q8- Improvements agreed are applied	44	3.7	8
Average weighted mean score		3.4	

From Appendix A, Table A.6 displays the project manager's responses to questions within this unit of competence.

In order to get a deeper understanding of the data from the participants, further analysis was conducted based on the scores and the ranking of the scores from low to high is presented as can be seen in Table 4.9. The scores were ranked from lowest to highest according to their weighted mean score as well as their order of presentation, i.e. if Q1 and Q3's scores are the same, they will be ranked 1 and 2 respectively.

In this unit, the lowest scores recorded were found to be on the tasks represented by questions 3 (3.0), 6 (3.1), 2 (3.2) and 4 (3.4). The number of the tasks is not three as was previously done for all other units. This unit in particular has four elements with a score under 3.5 indicating clearly that the level of performance shown by project managers is unacceptable. This also means that there are gaps in competence of project managers as highlighted by this unacceptable performance.

Information gathered after collecting and recording the data is used to evaluate the

state of the project. Without these data it is difficult to know the financial state of the project, the state of project deliverables, etc. *Philips et al.* (2002) identify in their research paper that the performance data that should be collected include among other things the following:

1. Return on investment
2. Cost of quality
3. Schedule performance

Organizations have a mandate to be profitable and to support projects that will be able to increase their profitability. In practice, projects are selected using criterion and models (*Meredith and Mantel*, 2012). Some of the criteria used are: cost (of quality, resources including labour, material), return on investment (profit/profitability, Internal Rate of Return), etc.

4.4 Discussion of results from senior managers

The representation of data on the perception of senior managers regarding the competences of project managers is shown in Tables 4.10, 4.11, 4.12, 4.13, 4.14 and 4.15.

The highest potential score per element as illustrated in Sec: 4.3.2 is 20 and the lowest potential score per element is 4. The analysis assumes that a score of 3.5 and higher indicates that the perception that senior managers hold about the project managers is that their level of performance is acceptable. A lower score indicates that their perception about project managers is that the performance level of project managers is unacceptable.

4.4.1 Stakeholder relationship management

In Appendix A, Table A.1 displays the senior manager;s responses to questions within this unit of competence. All senior managers participated in this study.

In order to get a deeper understanding of the data from the participants, further analysis was conducted based on the scores and the ranking of the scores from low to high as can be seen in Table 4.10.

The lowest scores that were recorded are on the tasks represented by questions 2 (3.0), 6 (3.5) and 7 (3.5). In this case, only one task that is denoted by question 2 is perceived to have been performed unacceptably by project managers.

As can be seen in Appendix A, Table A.1, the scores recorded from senior manager responses lies between the scores 3 and 4 on the Likert scale indicating that they are holding a perception that the level of performance by project managers on the tasks within this unit is acceptable.

4.4.2 Project Development Plan

As can be seen in Appendix A, Table A.2, an overwhelming majority of senior managers are of the opinion that PM are competent in this unit of competence, i.e. their level of

Table 4.10: Responses with low to high rankings

Unit 1-Stakeholder relationship management Questions	Weighted Total-SM	Weighted Mean-SM	Rank Scores
Q2- Stakeholder interests are Investigated	12	3.0	1
Q6- Roles are defined & documented	14	3.5	2
Q7- Expectations are determined	14	3.5	3
Q1- Stakeholder are determined	15	3.8	4
Q8- Performance is monitored	15	3.8	5
Q9- Development needs recognized	15	3.8	6
Q3- Stakeholder interests considered	15	4.0	7
Q4- Actions are implemented	16	4.3	8
Q5- Interpersonal skills are applied	16	4.3	9
Average weighted mean score		3.8	

performance is acceptable.

In order to get a deeper understanding of the data from the participants, further analysis was conducted based on the scores and the ranking of the scores from low to high is presented as can be seen in Table 4.11.

It must be made clear however that the lower scores do not indicate that the level of performance by project managers is unacceptable, because the lowest three scores recorded are all 3.8 and according to the Likert scale, they fall between '3' and '4', which represent 'sometimes-often' categories. Therefore, since there is no score that is below 3.5, no further discussion is needed.

4.4.3 Managing Project Progress

In Appendix A, Table A.3, four senior managers were requested to rate their perception on the level of competence of their direct subordinates (project managers) and all of them gave their perceptions.

Table 4.11: Responses with low to high rankings

Unit 2-Project development plan Questions	Weighted Total-SM	Weighted Mean-SM	Rank Scores
Q1- Understanding of project outcomes are agreed to	15	3.8	1
Q5- Lessons learned are documented	15	3.8	2
Q7- Potential conflicts identified	15	3.8	3
Q10- Response to risks documented	15	3.8	4
Q12- Project success criteria is agreed to	15	3.8	5
Q4- Assumptions, exclusions are known	16	4.0	6
Q6- Legal requirements are determined	16	4.0	7
Q2- Processes are identified	17	4.3	8
Q3- Work items are determined	17	4.3	9
Q8- Risks are identified (HIRA)	17	4.3	10
Q9- Risks are evaluated	17	4.3	11
Q11- Project success criteria is determined	17	4.3	12
Q16- Conflicts are addressed	17	4.3	13
Q17- Plan is approved	17	4.3	14
Q13- Resource requirements determined	19	4.8	15
Q14- Schedule is developed	19	4.8	16
Q15- Budget is developed	19	4.8	17
Average weighted mean score		4.2	

Three senior managers indicated that project manager's level of performance is acceptable.

In order to get a deeper understanding of the data from senior managers, further analysis was conducted and the results are shown in Table 4.12. The lowest scores recorded in this unit of competence by senior managers are on tasks represented by questions 6 (3.8), 8 (4.0) and 1 (4.1). Although the mean score is on Likert scale level 4, it cannot be concluded that the perception held by senior managers regarding the level of performance of project managers is unacceptable. What this means is that the perception held by senior

managers is that the project managers level of performance is acceptable regardless of the three lowest scores recorded.

Table 4.12: Responses with low to high rankings

Unit 3- Managing project progress-SM Questions	Weighted Total-SM	Weighted Mean-SM	Rank Scores
Q6- Changes to external environment monitored	16	4.0	1
Q8- Actions are taken	16	4.0	2
Q1- Project outcome agreed to	17	4.3	3
Q2- Processes are identified	17	4.3	4
Q7- Legal requirements are determined	17	4.3	5
Q9- Feedback on personal performance	17	4.3	6
Q5- Risks are monitored	17	4.3	7
Q10- Lessons learned are documented	18	4.5	8
Q3- Work items are determined	20	5.0	9
Q4- Corrective action is taken	20	5.0	10
Average weighted mean score		4.4	

4.4.4 Managing Product Acceptance

As can be seen by Table A.4 in Appendix A, an overwhelming majority of senior managers have indicated that they perceive the project managers performance level to be acceptable. None of the managers have ticked on Likert scale '1 or 2' but rather on Likert scale '3-4 and 5'.

Table 4.13: Responses with low to high rankings

Unit 4- Managing product acceptance Questions	Weighted Total-SM	Weighted Mean-SM	Rank Scores
Q1- Desired characteristics identified	17	4.3	1
Q2- Characteristics agreed to	17	4.3	2
Q3- Variances identified	17	4.3	3
Q4- RoC of product documented	17	4.3	4
Q5- Changes are implemented	19	4.8	5
Q6- Final product evaluated	19	4.8	6
Q7- Final product is handed over	19	4.8	7
Average weighted mean score		4.5	

Further analysis was conducted based on the scores and the ranking of the scores from low to high as can be seen in Table 4.13. The lowest scores that were recorded were on the following tasks represented by questions 1 (4.3), 2 (4.3) and 3 (4.3). The mean score indicated for the three lowest scores clearly shows that the perception that they hold about the project managers is that the level of performance on the tasks is acceptable. Therefore, no further discussion can be done because there is no score that is below 3.5.

4.4.5 Managing Project Transition

As can be seen by Table A.5 in Appendix A, senior manager's perceptions regarding their project manager's level of competence are recorded. An overwhelming majority (100%)

say that the project managers level of performance on the tasks is acceptable and this is reflected by the scores recorded in Table 4.13 in which the lowest three scores represented by Q2 (4.3), Q3 (4.8), Q5 (4.8) are shown ranked from low to high. These scores were analyzed further in order to get a deeper understanding of the data from the participants, further analysis was conducted based on the scores and the ranking of the scores from low to high as can be seen in Table 4.14.

The average score for all seven tasks is 4.5. The three lowest scores indicates that senior manager's perceptions about project manager's performance is that their level of performance on the tasks is acceptable.

Table 4.14: Responses with low to high rankings

Unit 5- Managing project transition Questions	Weighted Total-SM	Weighted Mean-SM	Rank Scores
Q2- Start-up activities are planned	17	4.3	1
Q3- Outputs of prior phase accepted	19	4.8	2
Q5- Transition activities are planned	19	4.8	3
Q6- Closure activities are planned	19	4.8	4
Q1- Stakeholder authorization for resources	20	5.0	5
Q4- Permission to start work is obtained	20	5.0	6
Q7- Project records finalized and signed-off	20	5.0	7
Average weighted mean score		4.8	

4.4.6 Evaluating and Improving Project Performance

In Appendix A, Table A.6, senior managers were asked to evaluate their perceptions about the competence of their project managers on this unit. Three senior managers indicated that project managers 'sometimes' ensure that after evaluating the performance of team members, the success or failure of the project the results are documented for future use. Majority of the managers have indicated that the project managers 'often' perform

the sub-tasks under this unit of competence.

Table 4.15: Responses with low to high rankings

Unit 6- Evaluating and Improving Project Performance Questions	Weighted Total-SM	Weighted Mean-SM	Rank Scores
Q6- Results of evaluations are documented	14	3.5	1
Q7- Potential improvements identified	16	4.0	2
Q1- Criteria of evaluation is determined	17	4.3	3
Q2- Evaluation technique determined	17	4.3	4
Q3- Performance data is collected	17	4.3	5
Q4- Evaluation process involves stakeholder	17	4.3	6
Q5- Ensure knowledge sharing	17	4.3	7
Q8- Improvements agreed are applied	17	4.3	8
Average weighted mean score		4.1	

In order to get a deeper understanding of the data from the participants, further analysis was conducted based on the scores and the ranking of the scores were presented from low to high as can be seen in Table 4.15.

The lowest scores that were recorded was on the following tasks, questions 6 (3.5), 7 (4.0) and 1 (4.3). None of the score was found to be below 3.5, which clearly indicates that the perception that senior managers hold about project managers is that their level of performance is acceptable.

4.5 Common treads

Tables 4.16 and 4.17 exposes the gaps that exist with regard to the competencies of project managers. The lowest scores identified from both project and senior managers are shown in the Table 4.16. The gaps were identified in three of the six unit of competencies, i.e. unit 1, 2 and 6 from project manager's responses.

Out of a total of 58 elements/ tasks, only seven (12%) were identified as tasks or areas

in which project managers level of performance is unacceptable. A totally different view from senior managers was observed and is represented in Table 4.17. Only one element/ task (1.7%) was identified as a gap. This task/ element is on unit 1 and although project managers indicated that their level of performance is acceptable on it, senior managers do not agree.

The conclusion that can be drawn from the results is that senior manager's overall perception about the project manager's competence level is acceptable.

Table 4.16: Gaps identified on PM's competencies

Unit	Description
Unit 1-Stakeholder Relationship Management	1. Development needs are recognized 2. Actions are implemented
Unit 2-Project development plan	1. Risks are evaluated.
Unit 6-Evaluating and Improving project performance	1. Performance data is collected 2. Evaluation technique is determined. 3. Results of evaluations are documented. 4. Evaluation process involves stakeholders.

Table 4.17: Gaps identified on SM's competencies

Unit	Description
Unit 1-Stakeholder Relationship Management	1. Stakeholder interests are investigated.

4.6 Chapter conclusion

The chapter exposes the gaps in the competencies of project managers. Only three units were found to have gaps as per project manager's responses. One unit of competence in which one element/ task was found to have a gap was identified by senior manager. This is the only competence area that senior manager perceive project managers to be lacking on.

Senior managers are of the opinion that project managers' performance and competence level is acceptable. If the project managers together with the senior managers can address the issue of risk identification, improve on stakeholder involvement and properly document project plans, the projects will be completed without too many problems.

The risks that a lack of identification of potential risks associated with the project poses includes huge financial impact on the overall company's performance.

CHAPTER V

Conclusion

Ability is what you are capable of doing. Motivation determines what you do. Attitude determines how well you do it.

Lou Holtz

5.1 Introduction

This chapter revisits the research problem as outlined in Chapter I by looking at the research results obtained in Chapter IV. Recommendations are made to the senior managers and the project managers in the organization. Finally, a recommendation is made about the possibility of future research based on the identified gaps.

5.2 Research Question 1- Project managers

What is the level of competence of the project manager within the organization?

The purpose of the research question was to determine the current competence level of project managers within the organization. A questionnaire was sent out to sixteen (16) project managers in which the units of competences developed by GAPPS model were theoretically tested.

Overall it seems as tif the project managers' level of competence is acceptable. Out of 58 elements within the six units of competence, seven were found to have gaps. These were elements within the following units of competencies:

1. **Unit 1: Stakeholder relationship management**
   (a) Development needs are recognized.
   (b) Actions are implemented. After investigating stakeholder interests, there must be an action plan to address the concerns raised by stakeholders. This was found to not be the case with the project managers.
2. **Unit 2: Project development plan**
   (a) Risks are evaluated.
3. **Unit 6: Evaluating and improving project performance**
   (a) Performance data is collected. According to (*PMI*, 2014), It is a basic requirement of a project manager to gather data and have it ready for evaluation.

(b) Evaluation technique is determined.

(c) Results of evaluations are documented.

(d) Evaluation process involves stakeholders.

The initial problem statement stated in Section 1.2 was: "Project managers in the organization are not competent to execute projects." The conclusion from the findings are that in overall project managers are competent in executing project tasks.

5.3 Research Question 2- Senior managers

What are the senior manager's perceptions regarding the project manager's level of competence?

The purpose of the second research question was to get a different view from senior managers whose direct subordinates are project managers.

The was only one element in which senior managers felt that project managers' level of performance is unacceptable. This element is in unit 1: Stakeholder relationship management..."ensuring that stakeholder interest are investigated." Project managers indicated that their level of performance on this task is acceptable.

The results indicates that senior managers are of the opinion that project managers are competent in performing the tasks as per GAPPS model of competence.

5.4 General conclusion

Farr and Brazil (2012) note that some project management competencies should be developed through formal training and others can be acquired through work experience. Gaining skills through experience is not easy, more especially if there are no mentors available to transfer the skills.

There is a level of agreement between senior managers and project managers that project managers' level of competence is acceptable.

5.5 Recommendations

5.5.1 Recommendation for PM's and SM's

1. Unit 1: Stakeholder relationship management... The first and probably the most important recommendations to project managers when dealing with stakeholders are that they should:
    - prioritize the key stakeholders and on a frequent basis evaluate the assumptions about levels of commitment and influence of stakeholders.
    - develop the key stakeholders and build commitment to implement the changes needed in a project.
2. Unit 2: Project development plan... Project managers should be more consistent in the application of a risk management methodology during the project. This has been identified as a contributing factor to the success and failure of a project. When project managers fail to effectively manage risks, a level of uncertainty about the project, success rises. Senior managers and project managers should be aligned on the development of a project risk framework that must be taken into account whenever a project is undertaken.
3. Unit 6: Evaluating and improving project performance... This is one unit where there is a complete lack of understanding and adherence from project managers. Senior managers should focus on ensuring that project managers do adhere to activities within this unit. Involvement of stakeholders is key in ensuring that everybody is in the same page regarding the evaluation process and criteria to be followed.

5.5.2 Recommendation for future rsearch

The topic for this particular research has not been researched extensively before, so it should receive more attention in the future. This study was conducted in only one gas

company based in South Africa, so the findings and opinions cannot be generalized.

A number of recommendations for future research are set-out below:

1. The study should ideally be repeated with a larger sample from the other 3 gas companies in South Africa to validate the findings of this study in the current context.
2. The study was mainly directed at project management competencies based on the GAPPS model.
3. In order to ensure that information is correctly captured, the author would like to have supporting documentation to support the information gathered during the data acquisition, i.e. *evidence in the form of project portfolio is needed from project managers to verify that they are performing tasks associated with the units of competence.*

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APPENDICES

APPENDIX A

Scoring

APPENDIX A

The PM and SM scores

The next time you face a challenge, remember that the cost of success us far cheaper than the price of failure... Tsem Tulku

A.1 Unit of Competences-Unit 1- Stakeholder Relationship Management

Table A.1: Unit 1: Stakeholder Relationship Management (Project Manager)

Questions	1	2	3	4	5
Q1- Stakeholder are determined	0	0	2	7	3
Q2- Stakeholder interests are investigated	0	2	3	5	2
Q3- Stakeholder interests considered	0	0	2	6	4
Q4- Actions are implemented	0	2	6	3	1
Q5- Interpersonal skills are applied	0	2	2	5	3
Q6- Roles are defined & documented	0	1	2	6	3
Q7- Expectations are determined	1	0	3	5	3
Q8- Performance is monitored	0	2	4	3	3
Q9- Development needs recognized	0	3	5	4	0
Never =1, Rarely = 2, Sometimes = 3, Often = 4 , Always = 5					

Table A.2: Unit 1: Stakeholder Relationship Management (Senior Manager)

Questions	1	2	3	4	5
Q1- Stakeholder are determined	0	0	1	3	0
Q2- Stakeholder interests are Investigated	0	0	4	0	0
Q3- Stakeholder interests considered	0	0	2	1	1
Q4- Actions are implemented	0	0	0	4	0
Q5- Interpersonal skills are applied	0	0	1	2	1
Q6- Roles are defined & documented	0	0	3	0	1
Q7- Expectations are determined	0	0	3	0	1
Q8- Performance is monitored	0	0	1	3	0
Q9- Development needs recognized	0	0	1	3	0
Never =1, Rarely = 2, Sometimes = 3, Often = 4 , Always = 5					

A.2 Unit 2- Project Development Plan

Table A.3: Unit of Competences-Unit 2: Project Development Plan (Project managers)

Unit 2 Questions	**1**	**2**	**3**	**4**	**5**
Q1- Project outcome agreed to	0	1	2	5	4
Q2- Processes are identified	0	1	1	6	4
Q3- Work items are determined	0	0	2	6	4
Q4- Assumptions, exclusions are known	0	2	4	3	3
Q5- Lessons learned are documented	0	1	1	8	2
Q6- Legal requirements are determined	0	1	1	3	7
Q7- Potential conflicts identified	0	1	4	3	4
Q8- Risks are identified HIRA	0	0	4	4	4
Q9- Risks are evaluated	0	3	3	2	4
Q10- Response to risks documented	0	2	2	5	3
Q11- Project success criteria is determined	0	2	3	5	2
Q12- Project success criteria is agreed to	1	1	3	3	4
Q13- Resource requirements determined	0	1	1	5	5
Q14- Schedule is developed	0	1	0	7	4
Q15- Budget is developed	1	0	2	3	6
Q16- Conflicts are addressed	1	0	0	7	4
Q17- Plan is approved	0	1	2	4	5

Never =1, Rarely = 2, Sometimes = 3, Often = 4 , Always = 5

Table A.4: Unit of Competences-Project Development Plan (Senior managers)

Unit 2 Questions	**1**	**2**	**3**	**4**	**5**
Q1- Understanding of project outcomes are agreed to	0	0	1	3	0
Q2- Processes are identified	0	0	1	1	2
Q3- Work items are determined	0	0	0	3	1
Q4- Assumptions, exclusions are known	0	0	1	2	1
Q5- Lessons learned are documented	0	0	2	1	1
Q6- Legal requirements are determined	0	0	1	2	1
Q7- Potential conflicts identified	0	0	2	1	1
Q8- Risks are identified (HIRA)	0	0	1	1	2
Q9- Risks are evaluated	0	0	0	3	1
Q10- Response to risks documented	0	0	2	1	1
Q11- Project success criteria is determined	0	0	0	3	1
Q12- Project success criteria is agreed to	0	0	2	1	1
Q13- Resource requirements determined	0	0	0	1	3
Q14- Schedule is developed	0	0	0	1	3
Q15- Budget is developed	0	0	0	1	3
Q16- Conflicts are addressed	0	0	0	3	1
Q17- Plan is approved	0	0	0	3	1
Never =1, Rarely = 2, Sometimes = 3, Often = 4 , Always = 5					

A.3 Unit 3- Managing Project Progress

Table A.5: Unit of Competences-Managing Project Progress (Project managers)

Questions	1	2	3	4	5
Q1- Project outcome agreed to	1	1	2	6	2
Q2- Processes are identified	0	1	4	5	2
Q3- Work items are determined	0	1	2	5	4
Q4- Corrective action is taken	0	1	2	5	4
Q5- Risks are monitored	0	2	1	6	3
Q6- Changes to external environment monitored	0	1	3	5	3
Q7- Legal requirements are determined	0	0	5	4	3
Q8- Actions are taken	0	0	1	9	2
Q9- Feedback on personal performance	2	1	4	5	0
Q10- Lessons learned are documented	0	4	2	1	5

Never =1, Rarely = 2, Sometimes = 3, Often = 4 , Always = 5

Table A.6: Unit of Competences-Managing Project Progress (Senior managers)

Questions	1	2	3	4	5
Q1- Project outcome agreed to	0	0	0	3	1
Q2- Processes are identified	0	0	0	3	1
Q3- Work items are determined	0	0	0	0	4
Q4- Corrective action is taken	0	0	0	0	4
Q5- Risks are monitored	0	0	0	3	1
Q6- Changes to external environment monitored	0	0	0	4	0
Q7- Legal requirements are determined	0	0	0	3	1
Q8- Actions are taken	0	0	2	1	1
Q9- Feedback on personal performance	0	0	0	3	1
Q10- Lessons learned are documented	0	0	1	0	3

Never =1, Rarely = 2, Sometimes = 3, Often = 4 , Always = 5

A.4 Unit 4 Managing Product Acceptance

Table A.7: Unit of Competences-Unit 4: Managing Product Acceptance (Project managers)

Questions	1	2	3	4	5
Q1- Desired characteristics identified	0	0	2	5	5
Q2- Characteristics agreed to	0	1	2	5	4
Q3- Variances identified	1	1	2	3	5
Q4- RoC of product documented	1	1	3	3	4
Q5- Changes are implemented	1	0	0	6	5
Q6- Final product evaluated	1	0	4	4	3
Q7- Final product is handed over	1	0	2	3	6
Never =1, Rarely = 2, Sometimes = 3, Often = 4 , Always = 5					

Table A.8: Unit of Competences-Managing Product Acceptance (Senior managers)

Questions	1	2	3	4	5
Q1- Desired characteristics identified	0	0	0	3	1
Q2- Characteristics agreed to	0	0	1	1	2
Q3- Variances identified	0	0	0	3	1
Q4- RoC of product documented	0	0	0	3	1
Q5- Changes are implemented	0	0	0	1	3
Q6- Final product evaluated	0	0	0	1	3
Q7- Final product is handed over	0	0	0	1	3
Never =1, Rarely = 2, Sometimes = 3, Often = 4 , Always = 5					

A.5 Unit 5: Managing Project Transition

Table A.9: Unit of Competences-Unit 5: Managing Project Transition (Project managers)

Questions	1	2	3	4	5
Q1- Stakeholder authorization for resources	0	0	3	2	7
Q2- Start-up activities are planned	0	0	1	2	9
Q3- Outputs of prior phase accepted	0	0	2	4	6
Q4- Permission to start work is obtained	0	0	2	3	7
Q5- Transition activities are planned	0	0	1	2	9
Q6- Closure activities are planned	0	0	0	5	7
Q7- Project records finalized	0	0	0	5	7
Never =1, Rarely = 2, Sometimes = 3, Often = 4 , Always = 5					

Table A.10: Unit of Competences-Managing Project Transition (Senior managers)

Questions	1	2	3	4	5
Q1- Stakeholder authorization for resources	0	0	0	0	4
Q2- Start-up activities are planned	0	0	0	3	1
Q3- Outputs of prior phase accepted	0	0	0	1	3
Q4- Permission to start work is obtained	0	0	0	0	4
Q5- Transition activities are planned	0	0	0	1	3
Q6- Closure activities are planned	0	0	0	1	3
Q7- Project records finalized and signed-off	0	0	0	0	4
Never =1, Rarely = 2, Sometimes = 3, Often = 4 , Always = 5					

A.6 Unit 6: Evaluating and Improving Performance

Table A.11: Unit of Competences-Unit 6: Evaluating and Improving Project Performance (Project managers)

Questions	1	2	3	4	5
Q1- Criteria of evaluation is determined	1	0	5	2	4
Q2- Evaluation technique determined	2	1	3	5	1
Q3- Performance data is collected	3	0	6	0	3
Q4- Evaluation process involves S/H	3	0	2	3	4
Q5- Ensure knowledge sharing	1	1	3	3	4
Q6- Results of evaluations are documented	1	3	4	2	2
Q7- Potential improvements identified	1	1	4	3	3
Q8- Improvements agreed are applied	1	0	4	4	3

Never =1, Rarely = 2, Sometimes = 3, Often = 4 , Always = 5

Table A.12: Unit of Competences-Evaluating and Improving Project Performance (Senior managers)

Questions	1	2	3	4	5
Q1- Criteria of evaluation is determined	0	0	0	3	1
Q2- Evaluation technique determined	0	0	0	3	1
Q3- Performance data is collected	0	0	0	3	1
Q4- Evaluation process involves stakeholder	0	0	0	3	1
Q5- Ensure knowledge sharing	0	0	0	3	1
Q6- Results of evaluations are documented	0	0	3	0	1
Q7- Potential improvements identified	0	0	1	2	1
Q8- Improvements agreed are applied	0	0	0	3	1

Never =1, Rarely = 2, Sometimes = 3, Often = 4 , Always = 5

APPENDIX B

Questionnaire

Dear Project Manager & or Senior Manager,

I am a student at the University of Johannesburg busy with a Master of Philosophy degree in Engineering Management. My research topic is based on the competences of Project Managers and the perception of Senior Managers on the level of competence of Project Managers. I am inviting you to participate in this research study by completing the questionnaire on the second page.

The questionnaire will require approximately 15-30 minutes to complete.

Thank you for taking the time to assist me in my educational endevours. The data collected will provide useful information regarding current competes of our project managers and the perception of senior managers on project manager's competences.

If you have any concerns, please do not hesitate to contact me or my supervisor on the contact details below. All responses will be confidential, and only combined analysed data will be published.

Sincerely,

Student:
Robert Nkgoeng

Supervisor
Dr A Marnewick

About you

1. **Your name (Optional)**: _____
2. **What is your age?** □20-25 □26-35 □ 36-45 □ 46 □ years old or above.
3. **What is your gender?** □Male □ Female.
4. **What is the level of your education?**
   □ Matric □ Diploma □ Bachelor □ Masters □ PhD □ other
5. **What type of projects have you managed till present?**
   □ Small □ Medium □ Complex □Large
6. **Are you currently working as a Project Manager or are you a Senior Manager? Which one?** _____
7. **Are you a holder of Project Management Certification?** □**Yes** □**No**
   If Yes, Please specify

Certificate Name: : _____

8. **How many years of experience do you have in Project Management?**
   □1-2 □ 3-6 □ 7-11 □ 12-25 □ more than 25 years.
9. **How satisfied are you with your role as a project manager?**
   □ Not at All Satisfied □ Slightly Satisfied □ Moderately Satisfied □ Very Satisfied □ Extremely Satisfied

Units of Competency

1. Please Evaluate Your Understanding of Stakeholder Relationship Management

Stakeholder Management is a proper method of identifying, analysing and planning ways of communicating, negotiating and influencing stakeholders. These are people with vested interest or a role to play in the project and are impacted both positively and negatively by the outcome of the project. This unit of competency seeks to address the following items:

1. Ensure that stakeholder interests are identified and addressed.
2. Promote effective individual and team performance.
3. Manage stakeholder communications.
4. Facilitate external stakeholder participation.

As a Project Manager, how frequent do you ensure that the functions below are done? As a Senior Manager, please rate the frequency at which the project manager has done the functions below?

SHM: 1.1.1. .: **all relevant stakeholders are determined?**
□ Never □ Rarely □ Sometimes □ Often □ Always

SHM: 1.1.2. .: **stakeholder interests are investigated and documented?**
□ Never □ Rarely □ Sometimes □ Often □ Always

SHM: 1.1.3. .: **stakeholder interests are considered when making project decisions?**
□ Never □ Rarely □ Sometimes □ Often □ Always

SHM: 1.1.4. .: **actions to address differing interests are implemented?**
☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

SHM: 1.2.1. .: **interpersonal skills are applied to encourage individuals and teams to perform effectively?**
☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

SHM: 1.2.2. .: **individual project roles are defined, documented, communicated, assigned, and agreed to?**
☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

SHM: 1.2.3. .: **individual and team behavioural expectations and established?**
☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

SHM: 1.2.4. .: **individual and team performance is monitored and feedback provided?**
☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

SHM: 1.2.5. .: **individual development needs and opportunities are recognised and addressed?**
☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

2. Please Evaluate Your Understanding of Project Development Plan (PDP)/Scope Management

A development plan is simply a process that shows the deliverables and work to produce them is identified and defined. This plan ensures that whatever the project is including or excluding is captured and planned for. It combines all project plans for a project. It's purpose is to document information regarding the planning process and to provide a reference document. It is therefore the responsibility of the project manager to completely take ownership of this process. The aim of this unit of competency is to evaluate the project's manager level and experience on it. This unit covers the following important aspects:

1. Defining the work that the project is about.
2. The ability of the project manager to ensure that the plan details relevant legal requirements of the project.
3. The risks and responses to the identified risks in the project are adequately dealt with.
4. The success criteria of the project is clear.
5. The development and integration of the project baselines.

As a Project Manager, how frequent do you ensure that the functions below are done? As a Senior Manager, please rate the frequency at which the project manager has done the functions below?

PDP 2.1.1. .:**ensure that a shared understanding of desired project outcomes is agreed to with relevant stakeholders?**
☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

PDP 2.1.2. .: **ensure that processes and procedures to support the management of the project are identified, documented and communicated to relevant stakeholders?**
☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

PDP 2.1.3. .: **ensure that work-items required to accomplish the product of the project are determined?**
☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

PDP 2.1.4. .: **ensure that the work-items and completion criteria are agreed to by relevant stakeholders?**
☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

PDP 2.1.5. .: **ensure that assumptions, constraints and exclusions are identified and documented?**
☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

PDP 2.1.6. .: **ensure that relevant knowledge gained from prior projects is incorporated into the plan for the project where feasible?**
☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

PDP 2.2.1. .: **ensure that relevant legal requirements are identified, documented and communicated to relevant stakeholders?**
☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

PDP 2.2.2. .: **ensure that potential of conflicts caused by legal requirements are identified and addressed in the plan for the project?**
☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

PDP 2.3.1. .: **ensure that risks are identified in consultation with relevant stakeholders?**
☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

PDP 2.3.2. .: **ensure that risk analysis techniques are used to evaluate risks and are prioritised for further analysis?**
☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

PDP 2.3.3. .: **ensure that responses to risks are identified and agreed to by relevant stakeholders?**
☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

PDP 2.4.1. .: **ensure that the measurable project success criteria are identified and documented?**
☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

PDP 2.4.2. .: **ensure that project success criteria are agreed to by relevant stakeholders?**
☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

PDP 2.5.1. .: **ensure that resource requirements are determined?**
☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

PDP 2.5.2. .: **ensure that the schedule is developed based on resource requirements, resource availability, and required sequence of work-items?**
☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

PDP 2.5.3. .: **ensure that budget is developed based on resource requirements?**
☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

PDP 2.5.4. .: **ensure that conflicts and inconsistencies in the project plan are addressed?**
☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

PDP 2.5.5. .: **ensure that the plan for the project is approved bu authorised stakeholders and communicated to relevant stakeholders?**
☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

3. Please Evaluate Your Understanding of Managing Project Progress

Managing project progress is a crucial process towards a successful outcome of a project. Failure to embark on this exercise brings about uncertainty regarding to the answer for 'When"will the project be completed. This process requires discipline and strong organisational skills from the project manager. The aim of this unit of competency is to evaluate the project's manager level and experience on it.

This unit covers the following important aspects:

1. Monitoring, evaluating and controlling the project performance.
2. Monitoring the risks that the project has assumed.
3. Reflecting on practice.

As a Project Manager, how frequent do you ensure that the functions below are done? As a Senior Manager, please rate the frequency at which the project manager has done the functions below?

Project Progress 3.1.1. .: **ensure that performance of the project is measured, recorded, evaluated and reported against the project baselines?**
☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

Project Progress 3.1.2. .: **ensure that the processes and procedures are monitored and variances are addressed?**
☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

Project Progress 3.1.3. .: **ensure that the completed work-items are reviewed to ensure that agreed completion criteria were met?**
☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

Project Progress 3.1.4. .: **ensure that corrective action is taken as needed in support of meeting project success criteria?**
☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

Project Progress 3.2.1. .: **ensure that the identified risks are monitored?**
☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

Project Progress 3.2.2. .: **ensure that changes to the external environment are observed for impact to the project?**
☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

Project Progress 3.2.3. .: **ensure that applicable legal requirements are monitored for breaches and conflicts?**
☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

Project Progress 3.2.4. .:**ensure that actions are taken as and when needed?**
☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

Project Progress 3.3.1. .: **ensure that feedback on personal performance is sought from relevant stakeholders and addressed?**
☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

Project Progress 3.3.2. .: **ensure that the lessons learned are identified and documented?**
☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

4. Please Evaluate Your Understanding of Managing Product Acceptance

The acceptance criteria includes performance requirements and important conditions that must be met before the project can be accepted as being successfully completed. These are criteria against which a project is measured that can be demonstrated to the clients that the work is complete. Some of the examples of the criteria used for acceptance testing for an IT machinery installation are:

- Backup & Restore Testing has been completed successfully.
- User Acceptance Testing has been completed and the project has been signed off by the project executive.
- All requirements have been approved.
- Business Continuity Plan is in place to be used in-case the IT system is unavailable.

The project manager must document the acceptance criteria in the requirements document and project scope statement.

The aim of this unit competency is to evaluate the project's manager level and experience on it.

This unit covers the following important aspects:

1. Defining the work that the project is about.
2. The ability of the project manager to ensure that the plan details relevant legal requirements of the project.
3. The risks and responses to the identified risks in the project are adequately dealt with.
4. The success criteria of the project is clear.
5. The development and integration of the project baselines.

As a Project Manager, how frequent do you ensure that the functions below are done? As a Senior Manager, please rate the frequency at which the project manager has done the functions below?

Product Acceptance 4.1.1. .: **ensure that the desired characteristics of the product of the project are identified in consultation with relevant stakeholders?**
☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

Product Acceptance 4.1.2. .: **ensure that the characteristics of the product of the project are documented and agreed to by relevant stakeholders?**
☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

Product Acceptance 4.2.1. .: **ensure that the variances from agreed product characteristics are identified and addressed?**
☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

Product Acceptance 4.2.2. .: **ensure that the requests of changes to the product of the project are documented, evaluated and addressed in accordance with the change control processes for the project?**
☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

Product Acceptance 4.2.3. .: **ensure that the approved product changes are implemented?**
☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

Product Acceptance 4.3.1. .: **ensure that the product of the project is evaluated against the latest agreed characteristics and variances addressed where necessary?**
☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

Product Acceptance 4.3.2. .: **ensure that the product of the project is transferred to identified stakeholders and accepted?**
☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

5. Please Evaluate Your Understanding of Managing Project Transition

A project transition plan is basically a document that outlines the processes to be followed during the implementation stage of the project. After each task has been completed, the project team cannot just present the completed stage of the project and walk-away, they are required to provide a thorough plan for the implementation of other stages. This process involves the following tasks:

- Identification of the key project members.
- Logistics considerations if there are any.
- The transfer of knowledge (training of the users of the system).
- Detailed schedules and plans for the implementation.
- Identification of risk factors.

As a Project Manager, how frequent do you ensure that the functions below are done? As a Senior Manager, please rate the frequency at which the project manager has done the functions below?

Project Transition 5.1.1. .: **ensure that authorisation to expend resources is obtained from the appropriate stakeholders?**
☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

Project Transition 5.1.2. .: **ensure that the start-up activities are planned and conducted?**
☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

Project Transition 5.2.1. .: **ensure that the acceptance of the outputs of a prior phase is obtained from the relevant stakeholders?**
☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

Project Transition 5.2.2. .: **ensure that the authorisation to begin work on a subsequent phase is obtained from the appropriate stakeholders?**
☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

Project Transition 5.2.3. .: **ensure that the transition activities are planned and conducted?**
☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

Project Transition 5.3.1. .: **ensure that the closure activities are planned and conducted?**
☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

Project Transition 5.3.2. .: **ensure that the project records are finalised, signed off and stored in compliance with process and procedures?**
☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

6. What is your level of Understanding on Evaluating and Improving Project Performance

Performance can be defined as the way people do their jobs and the results of their work. When a performance factor is missing and a gap in performance is evident, an intervention is required. It is through monitoring and evaluation that the team can be able to ensure project readiness by measuring the change in performance gaps which are identified during gap analysis The aim of this unit competency is to evaluate the project's manager level and understanding on it.

This unit covers the following important aspects:

1. Developing a plan for project evaluation.
2. Evaluating the project in accordance with the plan.
3. Capturing and applying learning.

As a Project Manager, how frequent do you ensure that the functions below are done? As a Senior Manager, please rate the frequency at which the project manager has done the functions below?

Project Performance 6.1.1. .: **ensure that the purpose, focus and criteria of evaluation are determined?**
☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

Project Performance 6.1.2. .: **ensure that the relevant evaluation techniques are determined?**
☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

Project Performance 6.2.1. .: **ensure that performance data is collected and analysed in accordance with evaluation plan?**
☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

Project Performance 6.2.2. .: **ensure that evaluation process engages relevant stakeholders?**
☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

Project Performance 6.3.1. .: **ensure that knowledge sharing and skill transfer is encouraged among relevant stakeholders?**
☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

Project Performance 6.3.2. .: **ensure that results of evaluations are documented and made available for organisational learning?**
☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

Project Performance 6.3.3. .: **ensure that the potential improvements are identified, documented and communicated to relevant stakeholders?**
☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

Project Performance 6.3.4. .: **ensure that improvements agreed for this project are applied?**
☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always