UNIVERSITY OF KWAZULU-NATAL

Towards effective project delivery: The influence of the Project Management Office
in the Department of Rural Development and Land Reform

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A dissertation submitted in partial fulfillment of the requirements for the degree of
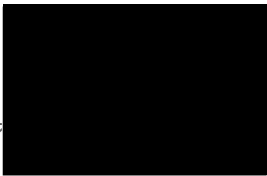MASTER OF COMMERCE IN LEADERSHIP

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Declaration

I Nokubonga Zungu solemnly declare that the dissertation titled "Towards effective project delivery: The influence of the Project Management Office in the Rural Development and Land Reform" submitted in partial fulfilment of the requirements for the degree of Master of Commerce in Leadership Studies, University of KwaZulu Natal is my original work that has never been submitted to any institution before. All sources cited and quoted herein are acknowledged in the list of references. There is no conflict of interest with regards to the research topic, the data collected, and the finding presented in the study.

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Abstract

The world we live in is highly projectised and there are many factors that contribute to successful project delivery in organisations. At the forefront of ensuring the latter is the Project Management Office (PMO) that plays a crucial role in this regard. Given the expectation of the PMOs to successfully deliver projects, the study investigated the value add, influence and involvement of the PMO in the public sector in South Africa. The study was undertaken at the Department of Rural Development and Land Reform (DRDLR) to ascertain the value, influence and involvement of the PMO in the public sector relating to project resourcing, project governance and project organisation which are the enablers to promoting project success. A mixed method research approach was adopted through structured questionnaires and research interviews and findings of the study presented side by side in comparison. Questionnaires were administered by employees involved with projects in the organisation and research interviews with senior personnel who were subject matter experts in the project management in the organisation. The findings reveal that the PMO in the organisation had moderate influence and involvement in project delivery with ill-defined roles on accountability and responsibility. Recommendations for successful implementation for project delivery included the development of a well-structured PMO with well-defined lines of authority; efficiently equipped PMO with resource managers capable of advising on adequate project resource deployment; close work relationships between the PMO and Business Units to promote project governance and accountability on the implementation of project methods and framework processes.

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The previous chapter discussed the findings of the study on the PMO influence and involvement in successful project delivery in the DRDLR and linked the findings to published literature. This chapter presents the conclusion of the study and recommends the scope, for

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CHAPTER 1

GENERAL INTRODUCTION

1.1   Introduction

The South African Government has set aside R884 billion in the 2017/18 fiscal year for the delivery of goods and social services (Treasury, 2017). This comes when the government is faced with challenges around service delivery which is regularly demonstrated by service delivery protests all over the country. These service delivery protests can be attributable to poor project delivery within the public sector (Chikulo, 2016). A Project Management Office (PMO) is tasked with managing entities' projects to ensure timeous and successful delivery of projects to the public. PMOs achieve their roles by utilising program driven planning procedures, processes, policies and standards, to ensure that projects are adequately resourced to achieve project goals. The PMO role is particularly on the spotlight given the radical economic transformation stance that the South African government is now driving as laid out in the National Development Plan 2030.

It is for this reason that the relationship between Project Management and PMO is crucial to support projects in the public sector which are generally of a complex nature with activities that require collaboration, integration and crossing of functional boundaries.

1.2   Background of the Study

The study involves the Department of Rural Development and Land Reform (DRDLR). Created in 2009 the DRDLR is a South African Government Ministry mandated to delivering social and economic development in the rural South Africa to ensure that the benefits enjoyed by the urban South Africans are enjoyed by their counterparts in the rural areas. The Ministry is mandated to mobilise rural communities to take initiative, establish cooperatives and enterprises for economic wealth creation, skills and employment. Through its Comprehensive Rural Development Program (CRDP), the

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DRDLR aims to realise its strategic objectives of optimising agricultural production by sustainable use of natural resources, improving economic and social infrastructure. The realisation of this strategic objective translates to numerous large and small-scale projects that are headed by the DRDLR in order to achieve the goal of social cohesion as prescribed by the National Development Plan 2030. The DRDLR is geographically dispersed in all nine Provinces. Each Province has a Provincial Shared Services Centre (PSSC) with sub units that run different projects and programs within its jurisdiction. A total operating budget of R26.5bn was allocated in the 2017/18 fiscal year (Treasury, 2017). At the time the study was conducted the DRDLR had a record of 1045 projects that were in progress.

It is against the backdrop given of the DRDLR that it should be noted that project management in the public administration is fast becoming challenging. According to Sarmad Kiania et al., (2015) a lot of projects fail due to exceeding time and cost, making organisations increase its usage of valuable resources. Hence organisations have become more and more oriented to the science of project management through the implementation of PMOs to aid in successful delivery of projects.

In theory, PMOs provide a supportive role for some aspects of a project and have total control and influence for some projects. In developing countries however, particularly in Africa, the role (in terms of support or control) of PMOs during project execution is obscure and this creates problematic issues that do not help in achieving project goals. PMOs inherently work with different stakeholders both internal (i.e. internal business units) and external to the organisation, the varied nature of stakeholders contributes to the complexities of managing and executing projects. Further complexities are introduced by external influences such as politics, economic, social, technological and environmental. PMO roles and functionality in the public sector are distinctly different to those observed in the private sector set up with the main contributing factor being that public sector projects are generally funded by means of taxes from the public and are therefore accountable and subject to public scrutiny (Van der Waldt, 2011).

1.3 The problem statement and motivation for the study

The common perception is that public sector projects are often not delivered on time owing to a number of reasons, reported budget overspend, unaccountable contractors and failing administration of contracts among many. Another reason is the paucity of adequate skills and funding, vacancy rates and procedural red tape. This perception paints a picture that service delivery in the public sector is attributable to lack of a good project management in the public sector.

A "Project Management Office (PMO) is an organisation structure that standardizes the project-related governance processes and facilitates the sharing of resources, methodologies, tools, and techniques (Project Management Institute, 2013)".

It is the mainstay of a successful project management approach within an organisation, tasked with helping to reduce failed projects, deliver projects within budget, improve productivity, deliver projects ahead of schedule, and increase cost savings. Stroh (2015) alludes that PMOs provide tremendous value to an organisation when they are managed correctly and operate within the proper intent to facilitate the successful completion of projects, however many organisations are still hesitant about PMOs. Cabanis- Brewin (2014) argues that PMOs are still lacking the recognition of their contributions. They are sometimes viewed as being extremely inflexible, adding further "unneeded" oversight and being overly dependent on "meaningless methodology framework".

PMOs can only function optimally and demonstrate value if they are implemented under a PMO framework that outlines and provides the capabilities it requires to successfully deliver on its mandate. Stroh (2015) attributes these to Governance, Policies, Training, Resources and Processes which are "enablers" of a PMO to successful project delivery.

A considerate amount of literature has been published on well-functioning PMOs in first world countries in continental Europe and America where PMOs are the drivers of successful projects within organisations. Contrary to the first world countries,

developing countries such as those in Africa have slowly followed suite in introducing the concept of PMOs in organisations and in the public sector. Theoretically, the roles of a PMO are distinct and do not overlap which naturally can obstruct smooth delivery of projects, however the situation is different with Public Sector projects in developing countries where the PMO roles are either blurred or overlapping. This constraint has negative consequence on the delivery of projects. The lines of authority, accountability and implementation of a fully-fledged PMO in developing countries are still vague and ill defined. Adding further to the confusion very little has been produced in literature on the influence that PMOs have or should have on delivering successful projects in an organisation.

Therefore the specific purpose of this research is to investigate or explore the degree of control or involvement of PMOs in the management of projects to ensure successful project delivery in the public sector.

1.4   The study

The primary focus is to investigate the degree of control and involvement of PMOs in the management of the projects to ensure successful delivery.

1.5   Objectives of the study

The objectives of this study are;

a) To determine the influence of PMO in acquiring resources to support project delivery within the organisation.

b) To ascertain the PMO influence on governance issues within the organisation during the lifecycle of the project.

c) To identify the level of involvement of the PMO in ensuring appropriate establishment and implementation of a project organisation.

d) To make recommendations on the relevance of PMOs, in public sector projects.

1.6   Research Questions

1.6.1   Primary research question

The primary research question of the study is as follows;

a) What is the degree of control and involvement of the PMO in project management to ensure successful delivery?

1.6.2   Secondary Research questions

a) What is the degree of influence of PMO in acquiring resources to support project delivery within the organisation?

b) To what extent does the PMO influence compliance to governance issues within the organisation during the life cycle of the project?

c) What is the level on involvement of the PMO in ensuring appropriate establishment and implementation of a project organisation?

1.7   Benefits of the study

The study will offer the following benefits;

a) Locate the PMO position in the public sector organisation hierarchy, analyse the operational framework of the PMO and identify the level of ownership and accountability entrusted to PMOs to drive successful project delivery.

b) Ascertain the PMO's value add to project delivery and realising organisational objectives.

c) Streamline the PMO roles in such a way that there is clarity in accountability, responsibility and ownership.

1.8   Research Methodology

1.8.1   Population and Sample

The research adopts a stratified random sampling method under the probability sampling category. The process involves a stratification or segregation into strata. Following this is the selection of subjects randomly from each stratum (Sekaran and Bougie, 2016). The research sample size is determined through the consideration of two factors;

a) The margin of error or Precision: denotes the positive and negative deviation that is allowed on the survey results for the sample (Research, 2017) or the amount of error which can be tolerated in a study.

b) Confidence level: denotes with certainty how the estimates of the research will hold true for the population (Sekaran and Bougie, 2016).

Figure 1.1: Sample size calculation formula

$$n \quad = \quad \frac{2(Z_a + Z_{1-\beta})^{2 \cdot 2}}{\Delta^2}$$

Source: (Bhalerao, 2010)

The target population of 72 consisted of Senior, Middle and Junior Management and Operational staff within DRDLR Gauteng who were working directly with projects in the organisation. Using a 10% margin of error and a 90% degree of confidence, a sample size of 36 participants was considered adequate for the study.

1.8.2 Data collection methods and treatment of data

A structured questionnaire on involvement and control of PMO at the DRDLR was used as a data gathering instrument. The questionnaire was designed based on literature theory and the researcher ensured that it was constructed using simple language and was presented in a logical order (Dudovskiy, 2014). As the research instrument had not been used in any other studies, the Cronbach Alpha, Shapiro Wilk and Kolmogorov Smirnov tests were conducted to ensure normality, validity, accuracy and credibility of the data.

1.9 Limitations of the study

The researcher acknowledges that the findings of the study can be generalised to a larger population. However, in this study the findings are limited to only the DRDLR in only one province (Gauteng Province) out of a possible nine provinces countrywide. The data for the study was gathered from a government entity. The private sector perspective was not considered in the study further limiting the generalisability of the research findings to a wider population.

1.10 Outline of the study

Chapter 1

The chapter provides an introduction, overview of the study and problem statement and briefly outlines the research processes and methods that are adopted by the study.

Chapter 2

The chapter presents literature research on PMOs, resource management, governance and project maturity. These subjects are critically discussed covering scholarly work published on the PMO and their role or contribution to project success in an organisation.

Chapter 3

A Mixed method research approach was adopted for the study. The chapter displays a detailed overview of research methodology, research design, and processes adopted by the study and how data was collected and presented in the study.

Chapter 4

This chapter presents the analysis of the quantitative findings from the data collected through the research questionnaire and the analysis of the Qualitative data collected through open ended interview questions with subject matter experts in Project Management in the organisation are also presented.

Chapter 5

The Chapter presents discussions of the research findings in relation to the research objectives. Comparisons and links of the findings are linked to the literature review to determine the degree of involvement and influence of the PMO in the DRDLR.

Chapter 6

This chapter provides an abstract synopsis of the study, concludes on the study, makes recommendations on how PMOs can contribute to the optimisation of project success and provides recommendations for future study.

1.11   Chapter Conclusion

Chapter 1 presented an introduction and background to the study. The research problem and questions were identified together with the aims of the study. A brief overview of the research methodology used was discussed. In conclusion a chapter summary of the chapters was presented to give line of sight the research layout. The following chapter presents literature review on a successful PMO, its relation to project resourcing, project governance, project organisation.

CHAPTER 2

LITERATURE REVIEW

2.1   Introduction

The previous chapter introduced the research topic, background of the study and the research objectives. This chapter defines key terms relating to the study and highlights the salient features of PMOs and types of PMOs. The literature analysis that is covered in this chapter on project resourcing, project governance and project organisation provides a theoretical basis for the study and enables discussions to be carried appropriately in chapter five where literature theory and research findings are compared to find any departure points.

2.2   Defining a project, program and portfolio management

Literature provides an array of definitions of a project however convergence is characterised by Kerzner (2014) that describes as a series of tasks or activities with a specific objective to be accomplished according to predetermined expectations, has definite beginning and completion dates, specific finance limitations, and consuming resources of human and non-human in nature. On the other hand, the PMBOK defines a project as a temporary endeavor undertaken to create a unique product, service or result.

Project Management is the achievement of project objectives indicated above, within time and cost, at the desired performance while utilising the assigned resources effectively and efficiently. **A program** is a group of related projects managed in a coordinated manner to obtain benefits not available from managing them individually. **Program management** is the application of knowledge, skills, tools and techniques to meet program requirements (Institute, 2018). **Project portfolio management (PPM)** is the management of an organisation's development projects as a totality that systematically and consistently implements an organisation's strategy (Aarni Heiskanen, 2012).

2.3   PMO definition

Several definitions of the Project Management Office have been proposed in literature. According to the Project Management Institute (PMI) as cited by Müller et al., 2013, "a PMO is an organisational body or entity assigned various responsibilities related to the centralised and coordinated management of those projects under its domain. The responsibilities of the PMO can range from providing project management support functions to actually being responsible for the direct management of a project". Kutsch et al., (2015) define a PMO as an organisational entity that provides functions and services. These include among others, maintaining standards, providing staff and resources, and advising executive management about the organisation's projects.

It is the backbone of a successful project management approach at an organisation helping to reduce failed projects deliver projects under budget improve productivity deliver projects ahead of schedule and increase cost savings (Stroh, 2015).

Literature further reveals that there is no consensus among research papers on the definitions or even the names for the PMO because of the broad discrepancies in terms of its size, structure, objectives, and functions as will be discussed and illustrated throughout this chapter (Ameri and Awad, 2016).

PMOs can only function optimally and demonstrate value if they are implemented under a PMO framework that outlines and provides the capabilities it requires to successfully deliver on its mandate. Stroh (2015) attributes these to Governance, Policies, Training, Resources and Processes which are "enablers" and "drivers" of a PMO to successful project delivery.

2.4   The importance and value of the PMO in an organisation

Different perceptions exist in literature regarding the importance and value add of the PMO in an organisation. Previous research studied by Stroh (2015), indicate that PMOs afford great benefit to an organisation when correctly managed and operating

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with a focus to facilitate the successful completion of projects (Stroh, 2015). Santos (2015) concurs that a PMO can be of great value as a promoter of project success and the key ingredient for better usage of resources. Successful project delivery in an organisation is attributed to the PMO which provides the primary organisational design strategy for improving efficiency and accountability Cabanis-Brewin (2014). Hubbard et al., (2015) states that successful project delivery by a PMO can only be achieved if the PMO has an influential structural position within the organisation and presents themselves as an executive level management business function.

Although the financial value add of the PMO cannot be clearly determined or defined with the use of financial tools like ROI (Return on Investment), pragmatic methods, balanced scorecards method and success factors, literature has indicated that PMOs do add value in the organisation in ways less than direct financial benefit, through the improvement of the assigning and management of assets, commitment, better collaboration between projects, management provided with better quality information for decision making and improved single project performance (van der Linde and Steyn, 2016).

Results of a study conducted by PM Solutions as cited by Cabanis-Brewin (2014) indicates that PMOs generally added value through a 23% decrease in the number of failed project, 35% improvement in the number of project delivered under budget and 20% improvement in productivity (Cabanis-Brewin, 2014).

However, Stroh (2015) indicates that many organisations are still hesitant about PMOs and their value add. This view is supported by Cabanis- Brewin (2014) who alludes that PMOs are still lacking the recognition of their contributions. The general perception is that they are sometimes viewed as being too inflexible, further adding to "unneeded" oversight and relying too much on "meaningless methodology framework" (Cabanis-Brewin, 2014).

2.5   The role of the PMO

Pursuant to the discussion on the core concepts and value that PMOs can add in the successful delivery of projects in organisations, it is now necessary to distinguish between the different types of PMOs that exist and the role that each play.

According to Taylor (2016), the PMO in an organisation "strives to standardise and introduce economies of repetition in the execution of projects and is the source of documentation, guidance, and metrics on the practice of project management and project execution."

In a study of the PMO typologies and models Kutsch et al., (2015) lists the main functions of a PMO by grouping them into five subgroups as follows,

a) Monitoring and controlling project performance by supporting management directly through production of necessary information to the decision making and project control and governance.

b) Developing project management competencies and methodologies centred in the development and training of Project Managers and defining methodologies.

c) Multi Project Management by directly managing projects, programs and portfolios as well as the allocating resources and coordination between projects that were planned or being executed in the organisation.

d) Strategic Management bringing closer the PMO and senior management, to be more involved in the organisation strategic alignment by executing benchmark analyses, strategic planning and reporting to top management information that will aid decision making.

e) Organisational learning – disseminating and archiving information of the projects to the benefit of future projects. This function associated with the performance of

audits, evaluations and lessons learnt which are often neglected by project teams (Kutsch et al., 2015).

Similarly, Reddy and Priyadarshini (2016) and Purohit (2012) are all of the same opinion with Kutsch et al., (2015) that the PMO serves in the roles as described above.

2.6   Types of PMOs

Albeit the literature highlights several types of PMOs and the functions attributed to each, a survey of 500 organisations conducted by Hobbs and Aubry as cited by van der Linde and Steyn (2016) corresponds to Muller et al. (2013) statement, as it revealed that PMO's situated in industry differ notably from those described in the literature. Differences occur in the structure, roles, functions of the PMO and the perceived value add of the PMO van der Linde and Steyn (2016). Clearly there is an indication from the work of van der Linde and Steyn (2016) that the value add of the PMO is varied just as the functions of the different types of PMO' are varied. Muller et al., (2013) agrees that PMO's are extremely heterogeneous evidenced by the variation in size, mandate and functions.

The generalisability of much published research on the topic of PMOs from Monterio (2017), Kutsch et al., (2015) and O'Brien (2014) indicates that activities commonly undertaken by the PMO operate under three levels of influence, Strategic, Operational and Tactical (Monteiro, 2017, Kutsch et al., 2015) (O'Brien, 2014).

The PMO operationally offers centralised backing to projects. Further, by employing well established principles and practices of project management in each project, professionalism and excellence are maintained (Monteiro, 2017). At tactical level the PMO contributes by coordinating and managing project dependencies and adherence to project management disciplines (Monteiro, 2017). Strategically, PMO involves both the above aspects and has authority to rank and prioritise projects by linking them to enterprise wide objectives and strategies and advise executive management on the feasibility of project investments (Monteiro, 2017). In the same view Kutsch (2015)

agrees by describing the range of service that the PMO offers as extending from operational (process driven, narrowly scoped) through tactical (inter-project relationships) to strategic (business-driven, enterprise-wide) (Kutsch et al., 2015). Thus Ameri (2016) believes that the primary role of the PMO is to advance the integration between projects and mandates, becoming an integrator for functional and operational areas (Ameri and Awad, 2016).

A broader perspective is adopted by Hill (2013) who elaborates on five types of PMO and the stages in which they can function at, depending on their competency. The stages are presented in a progressive and advancement of the PMO at each level of functionality and how each contributes to the project maturity in the organisation (Hill, 2013). Project maturity will be discussed in detail at a later stage in this chapter.

On the other hand, an interesting analysis of the PMO is made by Muller et al., (2013) identifying four kinds of PMO namely, Superordinate (controlling), Subordinate (servicing), Coequal (partnering) and a Balanced PMO (Müller et al., 2013). The authors in this instance identify that the PMO plays a multi-role in the organisation, which conforms to the idiosyncratic requirements of the organisation by varying their expression of a controlling, partnering or serving role. The serving role operates as a service unit to internal and external business units, project managers and project workers. The controlling role suggests that the PMO operates as a management unit for projects under their jurisdiction depending on the managerial authority they are assigned. PMOs may be required to ensure the maintenance of project management standards such as methods and tools, control of compliance and evaluation of project performance. The partnering PMO engages in equal knowledge sharing, exchange of expertise, lateral advice giving, and joint learning with equal level stakeholders (Müller et al., 2013). Furthermore, Muller et al., (2013) concurs with the view of Van der Linde (2016) that in practice each PMO may handle diverse roles at the same time and present a multifaceted profile consisting of a mixture of the roles described above and depicts this notion in a ternary model that plots each PMO in a location for their specific theoretical combination profile as in Figure 2.1 (Müller et al., 2013).

Figure 2.1: The PMO Triangle
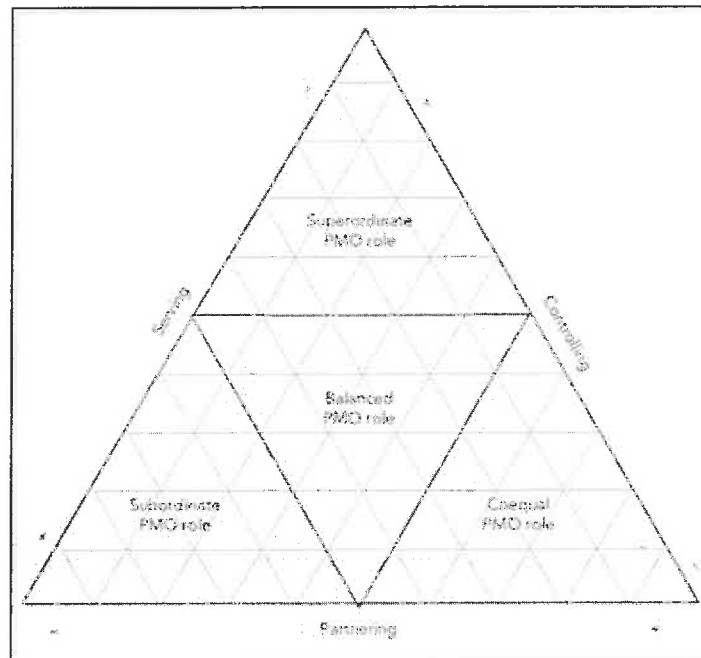
Source: (Muller et al., 2013)

2.7   A successful and effective PMO

According to O'Brien (2014) a successful PMO provides senior management and executives with the information required to make strategic decisions.   The author highlights a need for PMOs to tailor their role and function to the needs of the organisation in order to be successful. The crucial element being that the PMO adopts the "minimum sufficiency or right level of system controls, information-based assessment of progress and support.   It is imperative that the PMO pervades the behaviors and processes found in organisational strategic initiatives (O'Brien, 2014).

Hobbs and Aubry (2010) as cited by (Darling and Whitty, 2016) alludes that the strongest factors in the performance of a PMO is having competent staff whose expertise are recognized by the organisation, being embedded and engaged by the

organisation and advertising the PMOs organisational mission (Darling and Whitty, 2016).

In contrast to both Darling and Whitty (2016) as well as O'Brien (2014), Kutsch (2015) argues that a PMO is more likely to survive, be effective and provide cross-project learning if it remains close to those users that deliver the projects and also demonstrates a contribution to those who determine whether the cost of PMO resources is justified, Kutsch et al., 2015.

The above sentiment requires that the PMO is dependent and established on focusing its purpose as an integral service organisation and ensuring that this perspective is managed in a holistic and aligned manner (Kutsch et al., 2015). Reddy and Priyadarshini (2016) maintain that the PMO should drive a consistent message to people at all levels in the organisation of the PMO and what it is required to do (Reddy and Priyadarshini, 2016). The authors in this instance illustrate that a PMO is successful if it demonstrates continued business value to the organisation by performing functions that are explicitly and communicated throughout the organisation through a PMO charter. The necessary functions undertaken by the PMO in this instance are listed by Reddy and Priyadarshini (2016) as follows;

a) Showing people that programs and projects are strategic assets to the organisation and demonstrating the value they bring and establishing project management as a desired career in the organisation.

b) Focusing on knowledge transfer by establishing competency profiles which can be used to find a specific type of subject matter expert or project manager required to handle the level of complexity for an upcoming project.

c) Establishing a knowledge repository that can be accessed with a single point of entry with quality content, the PMO ensures lessons learned are collected along

the way (possibly facilitating these sessions) and holding debriefing sessions with people who leave the program or project early.

d) Working in tandem with the business development staff, the PMO can assist these people in recognising that many business development pursuits are projects--and can follow the existing methodologies the PMO staff can fosters a customer-centric approach where they can anticipate customer needs and requirements rather than waiting for a request for proposal or similar document.

e) Supporting portfolio management by ensuring each program and project has a business case prepared before it is submitted to a Portfolio Review Board or comparable group (Reddy and Priyadarshini, 2016).

2.8   The PMO and organisational strategy

Modern organisations see the PMO as the key to linking complex relationships of strategy, projects and structures (Darling and Whitty, 2016). At this level, the PMO entirely verifies how well the projects run by the organisation comply with the targets of;

a) *Strategic goals of the organisation:* PMOs should ensure that the projects that are carried out by the organisation are aligned with the strategic goals and objectives of the organisation as well as, ensuring that the project managers and their project teams are fully aware of the strategic objectives of the parent organisation and manage the projects according to the approved plan and processes of project management with respect to the agreed priorities and phases.

b) *Strategic growth of the organisation:* PMOs should ensure that the current approved projects properly support the development of the organisation in, this in turn helps to extend the steady progress of the organisation's strategic objectives.

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c) *Effective and efficient knowledge management:* PMOs ensure the development and enhancement of policies, procedures, templates, tools and techniques of project management by using standard procedures to facilitate the efficient exchange and transfer of professional knowledge and experience among the various levels of the project teams across multiple projects (Ameri and Awad, 2016).

Ameri (2016) demonstrates that a hierarchy of linking corporate strategy to the project strategy level as depicted in Figure 2.2 is to be adopted by organisational PMO to achieve compliance to and achieve the strategic targets highlighted above. The author argues that strategic planning serves as a catalyst for making rational decisions on the allocation of resources in order to pursue a specific business strategy resulting in making better strategic and tactical decisions in an effort to reach the desired business goals (Ameri and Awad, 2016). This alignment proves beneficial for the PMO as it refines the business strategy of its projects.

Figure 2.2: Hierarchy of linking corporate strategy to the project strategy
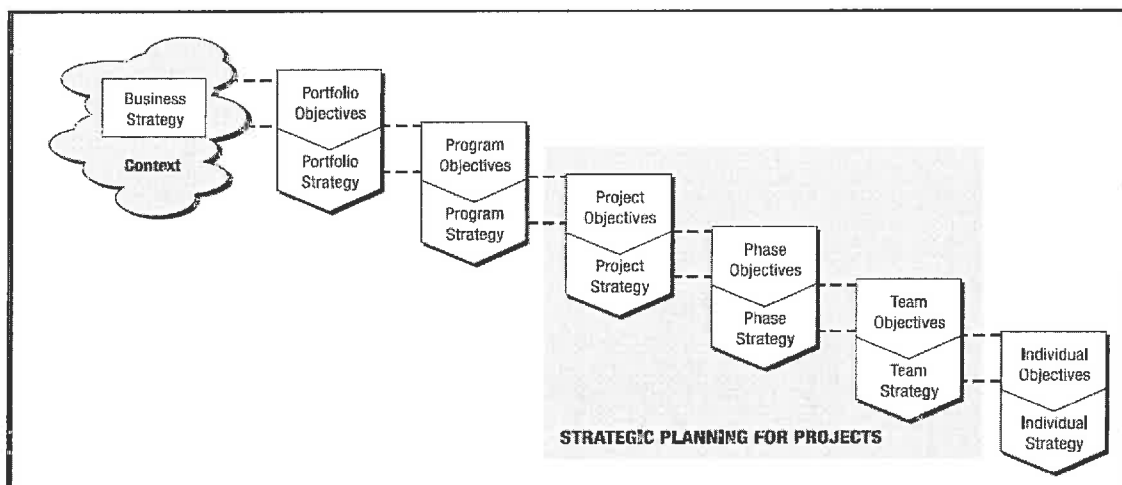
(Source: Ameri: 2013)

Purohit (2012) holds the view that the PMO should be a facilitating and enabling force that helps the organisation to realise its objectives as proposed in the organisational strategic plan. The author proposes that this may be achieved by focusing on the integration of three main organisational resources, People, Process and Tools (PPT), which are considered significant drivers in the effective execution of the organisation's strategic plans.

2.9   The PMO and resource management

A more detailed role of the PMO in resource management, governance and project organisation will be discussed.

Literature point to the fact that PMOs are established with various objectives including to improve efficiency of resource use (a process objective), make more effective use of scarce resources (a user objective), reduce the risk of project failures (through learning), and increase the success in terms of benefits delivered (a value objective) (Kutsch et al., 2015).

According to Khan (2017), resource management in the context of project management is the art and science of allocating the right resource to the right project at the right time by resource Managers in the PMO. Resource managers are skilled personnel who have a deep understanding of where resources are held within an organisation and what they are actually doing. They are able to advise on resource deployment and allocation, and guide colleagues regarding what is and is not realistic for the company's resources in terms of availability. Given their in-depth knowledge of the way in which resources are working 'on the ground' (Bailey, 2015).

The management and allocation of resources is one of the many challenges project managers face on a daily basis (Khan, 2017), from a resource management perspective, the PMO roles are centralised around the following key aspects;

a) **Evaluation of competencies of project managers**

PMOs evaluate the competencies of project managers not only in order to recruit the right candidates but also to improve the in-house project manager's professional development through competency assessments, effective training materials and programs. The organisation benefits of this exercise is that projects managed by capable people and projects are delivered on time and within budget to reduce project failure rates.

b) **Launching and managing professional development initiatives**
The PMO creates professional development programs that reflect project requirements, the needs and aspirations of team members and the overall objective of the organisation. In essence, they not only create training and skills development programs for project teams but further reward them in ways that reinforce success on projects consequently creating attractive career paths to attract and keep high performers.

c) **Providing realistic job descriptions that informs everyone's roles and responsibility**
Proper definition of roles and responsibilities not only makes the recruitment process less cumbersome but also makes sure that talented project practitioners are retained. Furthermore, it ensure that talented practitioners are stimulated by working on challenging projects that fulfil them professionally leading to efficient progress of projects and their on-time delivery, aligned to the company's strategic goals.

d) **Evaluating and determining the organisational capacity**
The PMO performs a resource inventory analysing resource shortages or overloads and accordingly recommending appropriate actions to optimize resource utilisation in various projects across different departments in the organisation (Khan, 2017).

2.10 Project Governance and the PMO

2.10.1 Governance

Without a governance structure, an organisation runs the risk of conflicts and inconsistencies between the various means of achieving organisational goals, processes and resources (Hjelmbrekke et al., 2014). Joslin (2014) cited from The Office of Government Commerce (OGC) (2002) terms governance as a framework that defines the accountability and responsibility of people who are driving the organisation as well as the structure, policies, and procedures under which the organisation is directed and controlled (Joslin, 2014). Governance defines project objectives, the required resource acquisitions, and the monitoring system on the progress of the project, thus making the viability of the project possible and steering it along the project life cycle (Alaray, 2016). Governance provides the structure through which the objectives of the organisation are set. Governance influences people indirectly through the governed supervision and directly through subtle forces in the organisation (and society) in which they live and work (Joslin, 2014).

Worthy of note is that the success or failure of projects has been researched not to be in the entire control of the project manager and project team, but the essential factor, governing the success or failure of projects is seen in the lack of governance (Alaray, 2016). This notion is supported by Hjelmbrekke, et al. (2014) who conclude that project success may be strengthened by a project management governance structure consisting of close co-operation between project owner and project manager throughout all phases of project work and whenever one of them feels the need for contact (Hjelmbrekke et al., 2014).

2.10.2 Project Governance

In a project environment governance takes place at different levels where there is project governance on individual projects, namely on the use of systems, structures of authority, and processes to allocate resources and coordinate or control activity in a project (Joslin, 2014). Project governance is a set of formal principles, structures and

processes for the undertaking and management of project that helps managers with an oversight that reduces the possibility of project failure.

Project governance is used in relation to project management and project performance improvement strategies (Lo and Cusack, 2015). However Ibrahim (2013) is of the view that these definitions are not fully representing the concept of project governance and that project governance should be aligned with the overall corporate governance, practical for implementation, monitoring, and involve project finance and the associated risks (Ibrahim, 2013). The PMI as cited by Joslin (2014) concurs with (Ibrahim, 2013) by defining project governance as the alignment of project objectives with the strategy of the larger organisation by the project sponsor and project team and is required to fit within the larger context of the program or organisation sponsoring it, but it is separate from organisational governance" (Joslin, 2014).

2.10.3   Importance of Project Governance

Following the increased number in project collapses, management has turned their attention to project governance. Shareholders and other stakeholders are demanding more accountability and transparency. Project governance focuses on the choice of projects and provision of end to end direction from commencement to the achievement of the business results, thus prioritizing the matching of projects with the strategic objectives of the organisation (Lo and Cusack, 2015).

Project governance affects risk planning, life cycle management, strategic change, and the value management of a project. It involves setting up clear functional responsibilities, authorities, organisational alignment, policies, and reporting structures. In addition it involves the composition of the control board and steering committee, their responsibilities, charters, sizes, and operations (Ibrahim, 2013). Project governance informs effective decision making to realise benefits and value for money through successful project delivery (Garland, 2017). Authors' (Lo and Cusack, 2015) view is that project governance provides a framework for the organisation of responsibilities

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and decision-making capabilities (Lo and Cusack, 2015). Effective governance of projects in a corporate governance framework offers top management a clear visibility and control of non-routing corporate operation land delivery capability (Bernardo, 2014).

2.10.4 Project governance framework

In the view of Garland (2017), a project governance framework should compromise of a **structure** that is made up of the governance decision-making committees and roles, the **people** within the governance structure and the **information** that is used by the decision makers. The framework should distinctively ensure;

a) Separate organisational governance and project governance to speed up decision making since project decision path do not follow the enterprise organisational line of command.

b) A single point of accountability to clarify decision making and empower the accountable person.

c) Partitioning stakeholder management and project decision making activities to avoid decision making forums with stakeholders resulting in laboured decision making.

d) Development and maintenance of the business case.

e) Transparency of decision making responsibilities making sure that all stakeholders are certain as to who makes which decisions and why (Garland, 2017).

2.10.5   The PMO and Governance

A PMO should be built around an enforcement model, that focuses on proper implementation of standards, project processes and governance that best ensures delivery success without being evasive to operations (Reddy and Priyadarshini, 2016). There should be a well-defined structure to facilitate support stability in the growth and maturity of the organisation and dedication from senior management. However, apart from such a structure, from the governance perspective, an effective PMO has the capability of providing support cutting across all the three levels: project, program and portfolio management ensuring that their objectives are strategically aligned to the overall organisation objectives.   This capability is realised through monitoring (i.e. control), methodology (i.e. infrastructure support and resource management) and mentoring (PM training and career development) (Alaray, 2016).

The PMO handles the deployment of project management or other related standards that are integrated with the project methodology, and ensures compliance of the project management practices with the best international standards (i.e. PMI, ISO9001, ISO10006) and other regulatory standards that the organisation adheres to (i.e. policies, regulations and business excellence) (Ibrahim, 2013).

Joslin (2014) maintains that governance in an organisation can take form of an "outcome control focus" or a "behaviour controlled focus" based on whether the organisation is shareholder or stakeholder oriented.   Four governance paradigms are identified under this prescript and the key points that are the drivers for each paradigm as depicted in Figure 2.3 (Joslin, 2014).

Figure 2.3: The governance paradigms

	Shareholder Orientation	*Stakeholder Orientation*
Outcome control focus	**Flexible Economist Paradigm** • Highest possible Return on Investment (ROI) • Project management as core competence • Professional project managers • Guided by tactical Project Management Offices (PMO)	**Versatile Artist Paradigm** • Balancing requirements of a wide range of stakeholders • Tailoring of methods • Project management a core competence • Project management a profession • Guided by a strategic PMO
Behavior control focus	**Conformist Paradigm** • Maximizing shareholder return • Project management a subset of development processes for technical products or services. • Project management is understood as on-the-side task	**Agile Pragmatist Paradigm** • Balances the diverse requirements of a variety of stakeholders by maximizing their collective benefits • Maximize value by strict prioritization of user needs.

(Source: Joslin, 2014)

Each quadrant represents a governance paradigm and every organisation can be represented by one of these paradigms (Joslin, 2014). Worthy of noting in Figure 2.3 is the "Flexible Economist Paradigm" and Versatile Artist Paradigm" which are outcome control focused. The distinction on both paradigms is that Shareholder oriented organisations are guided by a tactical PMO as opposed to Stakeholder oriented organisations guided by a strategic PMO (Joslin, 2014).

2.11 The PMO and project organisation

Project maturity is the progressive development of the organisations approach to managing projects applying methodology and strategy. The highest level is reached when requirements and standards for project management effectiveness as defined by the model are met. Research indicates that organisations with higher project maturity

levels exhibit project effectiveness and efficiency (Backlund, Chroneer, & Sundqvist, 2014).

The variation in PMO roles can be justified due to the high level of PMO maturity, organisation needs and organisation maturity. According to Hill (2013) there are 5 levels in PMO maturity. These are illustrated in Figure 2.4, where certain attributes of the PMO gradually increase with increasing maturity level.

Figure 2.4: The PMO maturity levels
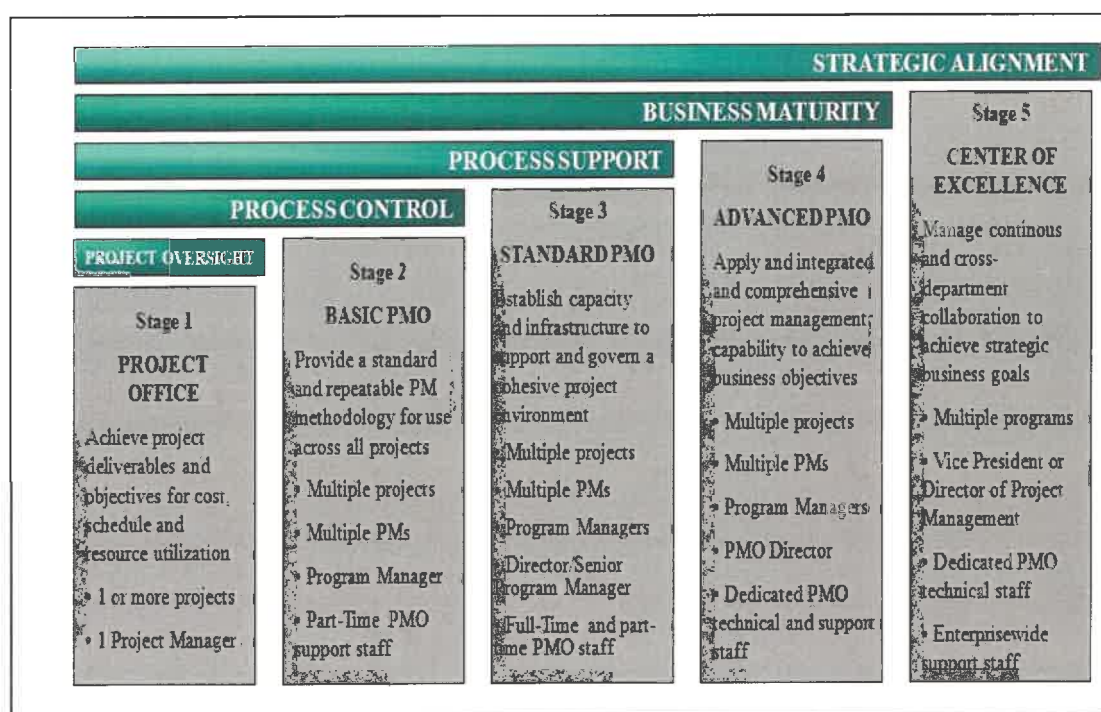
(Source: Hill, 2013)

At stage 1 is a Project Office responsible for achieving project deliverables and objectives for cost, schedule and optimum resource utilisation. The mandate at this stage is Project Oversight. Stage 2 represents a Basic PMO providing standards and repeatable project methodology across all projects. The primary functionality at this stage is Process Control. Stage 3 illustrates a Standard PMO tasked with establishing

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capabilities and infrastructures to champion a cohesive project support. At this stage, the Basic PMO represents a complete and comprehensive PMO capability. At Stage 4 the Advanced PMO performs oversight, control and support activities together with the expanded functionality that represents a mature and business oriented organisation. The Stage 5 Centre of Excellence operates as a separate and distinct unit championing enterprise wide project management. At this stage the PMO provides direction, influences operations and business interest across divisions in the organisation (Hill, 2013). Ibrahim (2013) concurs with Hill (2013) in that most scholars maturity parallel to into these five levels irrespective of the different terminologies used to label the PMO (Ibrahim, 2013).

2.12   PMO Challenges

There is still much uncertainty and suspicion in the creation of a PMO by organisations; furthermore there are some who question its value (Khalema et al., 2015). Khalema (2015) alludes that establishing a PMO in the organisation should not be seen as a quick solution to the organisational project maturity. Formal project management practices in South Africa are still in the development phase with most organisations still manifesting low maturity levels. There are neither formal standards nor general consensus on the role of project management in a lot of organisations adopting a matrix structure (Khalema et al., 2015).

Many organisations have adopted the PMO to attain project management supervision, control, monitoring, support and alignment however the true benefits and inherent value of the PMO has been intangible (Khalema et al., 2015). Santos and Varajão (2015) concurs that PMOs are still not providing the desired success even though organisations have evolved and understand the importance of the PMO. This is more apparent in the public sector where entities lag behind the private sector firms in the amount of hands-on project and program execution they report (Cabanis-Brewin, 2014). There are many more challenges in public sector projects than in private sector projects; examples include the involvement of multiple stakeholders , managing an

environment that is constantly changing, coping with constraints associated with political systems, organisational structures and inadequate resources (Khalema et al., 2015).

Research in PMO and its influence on OPM is very limited in South Africa, although some studies may have been done in Information Technology, little has been done in the public sector where the government where billions are spent on projects (Khalema et al., 2015) .

2.13   Chapter Conclusion

This chapter has demonstrated the scholarly work of researchers on the PMO. The successful PMO was discussed in relation to strategy, resourcing, governance and project organisation which are all attributes to its success and value adding in an organisation. Although much literature has factually displayed an understanding of the importance of the PMO, there still appears to be a gap and ill-defined prescripts in terms of the involvement and influence that the PMO should have in respect of the above prescripts in order to promote successful project delivery in the public sector organisations. The following chapter outlines and discusses in detail different methodologies available for research advantages, disadvantages of each and highlights the method adopted for this study.

CHAPTER 3

RESEARCH METHODOLOGY

3.1   Introduction

The previous chapter dealt with relevant literature on the involvement and authority of PMO in management of projects. This Research Methodology chapter describes the broad research philosophy approach, strategies, design, techniques and methods used. The chapter describes each element above and provides a motivation for choices that are made.

3.2   Philosophical paradigm

Research as defined by Dudovskiy (2014) involves using a systematic way to find out things you did not know (Dudovskiy, 2014).   The Methodology is the philosophy underpinning the research or the basis on which the research is established (Dudovskiy, 2014).

Understanding the meaning of philosophical assumptions is a necessity, as it assists in guiding researchers about the kind and form of data to be collected, as well the appropriate approach to tackling the research problems.   Moreover, the researchers philosophical assumptions help to find an appropriate methodology for addressing the research questions and data collection methods (Ameri and Awad, 2016).

The research onion as depicted in Figure 3.1 demonstrates the stages to be covered in developing a research strategy. It provides an effective progression through which a research methodology can be designed (Suanders et al., 2009) as cited by (Essays, 2013).

Figure 3.1: The Research Onion
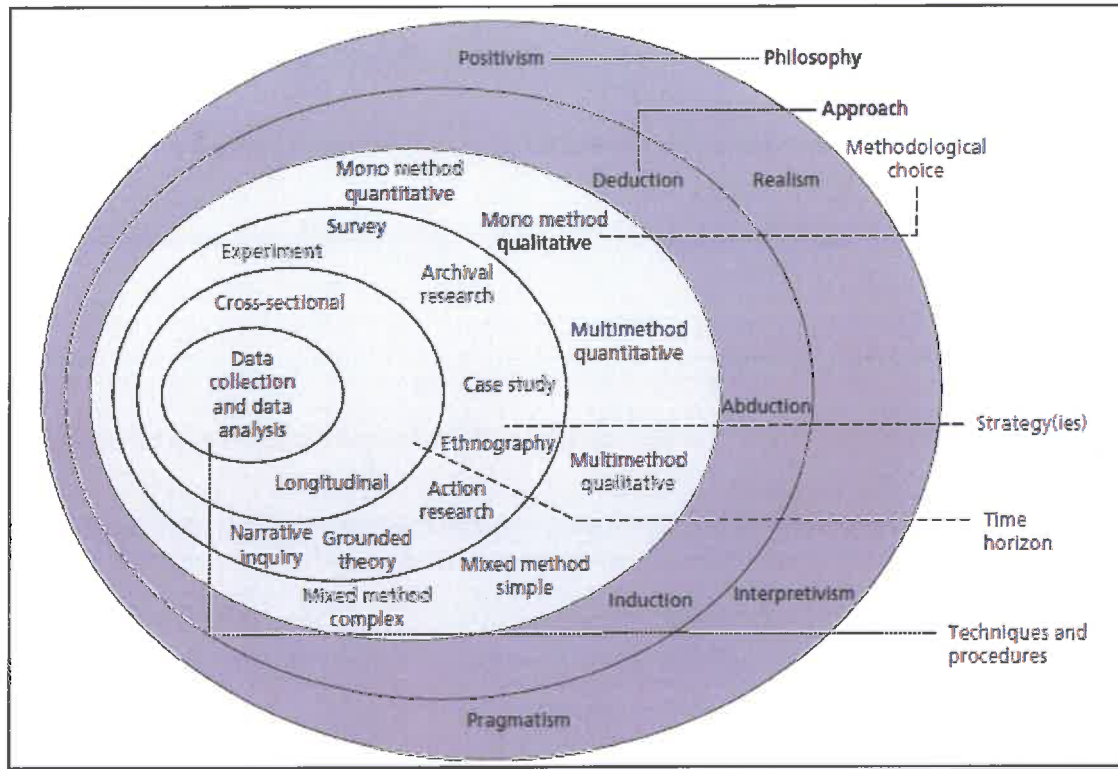
(Source: Dudovskiy, 2014)

The outer layers of the onion represent the root of the research and the middle layers its building blocks. According to Ameri (2016), the philosophical assumptions are fundamental to the development of the correct research design which is consistent with the objectives and the research questions.

According to Saunders (2009) four research philosophies within which the scope of business studies resides are identified and include; positivism, realism, pragmatism and interpretivist which will be briefly unpack below.

Positivism paradigm holds the view that probability determines the effects or outcomes. Therefore, positivists study problems to identify and assess causes and effects that

influence outcomes of experiments (Creswell, 2014). There is also objective measurement of observations in positivistic approaches.

Realism research philosophy relies on the idea of independence of reality from the human mind. The paradigm branches from epistemology, which is based on the assumption of scientific approach to the development of knowledge (Dudovskiy, 2014).

Interpretivism integrates human interest into a study. "Interpretive researchers assume that access to reality (given or socially constructed) is only through social constructions such as language, consciousness, shared meanings, and instruments (Dudovskiy, 2014)."

In **Pragmatism** research philosophy, concepts are relevant only if they support action. Pragmatics "recognise that there are many different ways of interpreting the world and undertaking research, that no single point of view can ever give the entire picture and that there may be multiple realities" (Dudovskiy, 2014).

This study adopted a positivist research paradigm to determine the cause and effects that contribute to the successful delivery of projects and influence that the PMO should be afforded to promoting project delivery. Positivists are also objective in their research because their measurements are based on observations as they are not part of the setting in which the research is being conducted. Positivism philosophy verifies theories or explanations by identifying variables of interest, relating variables in questions or hypotheses, using standards of reliability and validity, data is measured numerically using unbiased approaches employing statistical procedures (Dudovskiy, 2014).

3.3   Research Approach

The second layer of the research onion informs that a philosophical approach can take a form of Deductive, Inductive or Abductive reasoning. A **deductive approach** is concerned with "developing a hypothesis (or hypotheses) based on existing theory and then designing a research strategy to test the hypothesis" (Dudovskiy, 2014). A known theory or phenomenon is tested to ascertain if that theory is valid in given circumstances. Using the deductive approach, the researcher formulates a set of hypotheses at the start of the research. The process is followed by choice of relevant research methods which are applied to test the hypotheses in order to prove them right or wrong. Deductive reasoning approach is depicted in Figure 3.2.

Figure 3.2: Deductive Reasoning
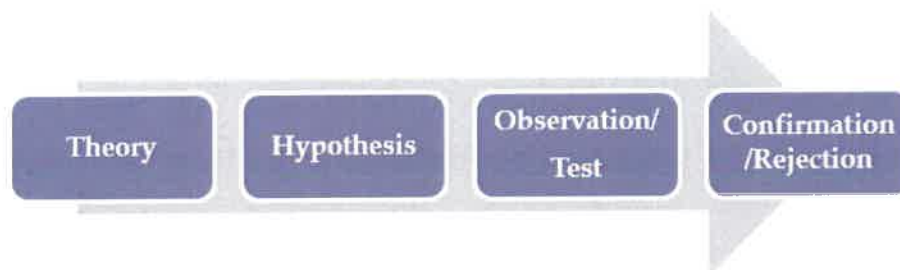
(Source: Dudovskiy, 2014)

Inductive approach, also known in inductive reasoning, starts with the observations and theories are proposed towards the end of the research process resulting from the observations. It is often referred to as a "bottom-up" approach to knowing, because the researcher utilises their observations to build an abstraction of the phenomenon being studied (Dudovskiy, 2014). Inductive reasoning approach is depicted in Figure 3.3.

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Figure 3.3: Inductive Reasoning
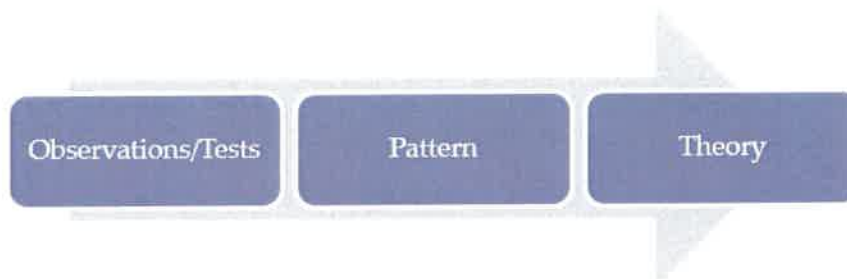
(Source: Dudovskiy, 2014)

The application of inductive approach is often related with qualitative research, while deductive approach is grouped with quantitative methods (Dudovskiy, 2014).

One criticism of Deductive reasoning is its lack of clarity with respect to how to select the theory to be tested in order to formulate the hypotheses. Inductive reasoning, on the contrary, is often criticised because no amount of empirical data will necessarily enable theory building, hence **abductive reasoning approach**, as a third alternative seeks to overcome the weaknesses associated with deduction and inductive reasoning via adopting a pragmatist philosophical perspective (Dudovskiy, 2014).

The study adopted a deductive research approach where the researcher began by consulting existing theories, frameworks and literature to investigate the degree of control or involvement of PMOs in the management of projects to ensure successful delivery at the DRDLR to deduce a hypothesis logically linking the proposed variables.

3.4   Research Design

According to Sekaran (2016) a research design is the "blueprint or plan for the collection, measurement and analysis of data created to answer research questions." It

can be formulated by means of experiments, survey research, case studies, grounded theory and action research. Creswell (2014) identifies three types of inquiry that provide specific direction for procedures in a research study, these are qualitative, quantitative, and mixed methods approaches (Creswell, 2014).

3.4.1 Quantitative research method

A Quantitative approach to research is concerned with numeric description of trends, attitudes, opinions through a study sample of an identified population (Creswell, 2014). It describes and measures the level of occurrences based on numbers and calculations (Dudovskiy, 2014). Quantitative research methods describe and measure occurrences on a basis of numbers and calculations (Dudovskiy, 2014). The method entails the collection of numerical data and exhibiting the view of relationship between theory and research as deductive (Dudovskiy, 2014).

3.4.2 Qualitative research method

A Qualitative research approach seeks to explore and understand the meaning a certain group of individuals impute to a social problem. The researcher uses emerging questions and procedures to make interpretations of the meaning of the data. This kind of research is inductive in nature and focuses on individual meaning and the importance of rendering the complexity of the situation (Creswell, 2014).

3.4.3 Mixed method

Mixed Method research approaches seek to answer questions that cannot be addressed through quantitative or qualitative approaches on their own (Sekaran and Bougie, 2016). This approach involves both quantitative and qualitative approaches to integrate the two using distinct designs (Creswell, 2014). The assumption is that this approach paints a clearer picture of research problem than either one method could produce alone. A mixed method can take shape of three forms;

a) **Convergent parallel**, where the researcher blends quantitative and qualitative data to comprehensively analyse the research problem.

b) **Explanatory sequential**, first conducts quantitative research, analyses the results and then builds on the results to explain them in more detail with qualitative research.

c) **Exploratory sequential**, begins with qualitative research phase then explores participants' views. Data is analysed and used to build into a second, quantitative phase (Creswell, 2014).

The current study on the level of involvement and control of the PMO used the **Convergent parallel method**. Qualitative and quantitative data was collected roughly at the same time and integrated to interpret the overall results.

3.5   Research Strategy

Philosophical paradigms, their reasoning and research strategy inform the research strategy that a study adopts. Research strategy can take form of;

a) **Experiment** where the researcher manipulates the independent variable to study the effect of this manipulation on the dependent variable (Sekaran and Bougie, 2016).

b) **Survey** research where the researcher collects information from people and compares it to explain attitudes and behavior (Sekaran and Bougie, 2016). Data is evaluated using statistical methods to identify patterns.

c) **Case study**, the information about a specific object is collected at the organisation. The reasoning behind the case study is that to get a clearer picture of a problem the researcher must examine the real-life situation from various angles and perspectives using multiple methods of data collection (Sekaran and Bougie, 2016).

d) **Action research** is a research strategy aimed at initiating change processes, with incremental focus for narrowing the gap between the desired and actual states (Sekaran and Bougie, 2016). The researcher collects data to provide a solution to a problem that has already been identified to provide a tentative problem solution. The solution is implemented with the knowledge that there may be unintended consequences following such implementation, and the effects are reevaluated, redefined and diagnosed forming an ongoing basis until the problem is fully resolved (Sekaran and Bougie, 2016).

e) **Grounded theory** "is a systematic set of procedures to develop an inductively derived theory from the data (Sekaran and Bougie, 2016)."

f) **Ethnography** requires the researcher to closely observe records, engage in the daily life of another culture. It involves immersion in the particular culture or group that is being studied to observe behaviors to generate an understanding of the culture (Sekaran and Bougie, 2016).

g) **Archival research** is research work generally done with records documents, writings, charts, files, paper clips, maps and organisational devices" (Macías, 2016).

The research strategy of the study took form in the form of a survey to collect quantitative data through questionnaires and qualitative data through structured interviews. Questionnaires are pre-formulated written set of questions to which the respondent records the answers within rather closely delineated alternatives (Sekaran and Bougie, 2016). Structured interviews are performed through prepared questions for the interviewee. The advantage of structured interviews is that the researcher uses open ended questions to ascertain the perceptions of the responded which often lead to further pertinent questions that are not in the prepared questions thus giving the researcher more suggestions for probing follow up questions to answer what is unclear and to understand in its totality the situation through the eyes of the respondent (Sekaran and Bougie, 2016). Questionnaires were adopted as a form of collecting quantitative data as they can accommodate large number of respondents and are generally less expensive and less time consuming compared to interviews.

3.6   Research Time horizon

3.6.1   Cross-sectional studies

One shot or cross sectional studies are undertaken in a setting where data is gathered just once, perhaps over a period of days, weeks or months to answer a research question(Sekaran and Bougie, 2016).

3.6.2   Longitudinal Studies

In cases where the researcher wants to study people of phenomena at more than one point in time to answer the research question a longitudinal study is conducted. In such instances data is collected at two different points in time across a period. These studies are more expensive than cross-sectional studies and further take up more time and effort (Sekaran and Bougie, 2016).

The study was carried out in a cross - sectional study in a non-contrived setting i.e. "The research collected the data once over a couple of weeks in a natural environment where the events proceeded normally" to attempt to answer the research questions. Non-contrived studies also called field studies seek to establish the cause and effect relationships in the natural environment where the subjects being studied function normally (Sekaran and Bougie, 2016).

3.7 Population

The population refers to the entire group of people, events or things that the researcher desires to investigate (Sekaran and Bougie, 2016). A population is an important factor to assist the researcher in establishing the representativeness of the sample for generalisability to draw conclusions from the responses given by the sample population. If the researcher does not use an adequate sampling design they may end up with small sample size which may not be appropriate to generalise the findings to the population (Sekaran and Bougie, 2016). In this study the population consisted of Executive personnel, Senior Management, Management, Specialists, Functional and Operational staff within Department of Rural Development and Land reform in Gauteng. Based on the above audience, the population was estimated at 72.

3.7.1 Sampling design and sampling techniques

Sampling in research is the process of selecting items from the population so that the sample characteristics can be generalised to the population. The sample size is the actual number of subjects chosen from the population to represent the population characteristics (Sekaran and Bougie, 2016). The sample size for the research is picked from the sampling frame which is a physical representation of the elements from which the sample is drawn from (Sekaran and Bougie, 2016). Dudovskiy (2014) indicates that the advantage of sampling in research makes the research type and size more manageable; accelerate the speed of primary data collection, resulting in more accurate findings.

Sekaran (2016) and Dudovskiy (2014) identify two major types of sampling design, **"probability sampling"** through simple, stratified, systematic, and cluster methods or **"non-probability sampling"** through purposive, quota, volunteer and haphazard methods (Dudovskiy, 2014, Sekaran and Bougie, 2016). Figure 3.4 displays sampling methods within each category.

Figure 3.4: Categories of Sampling
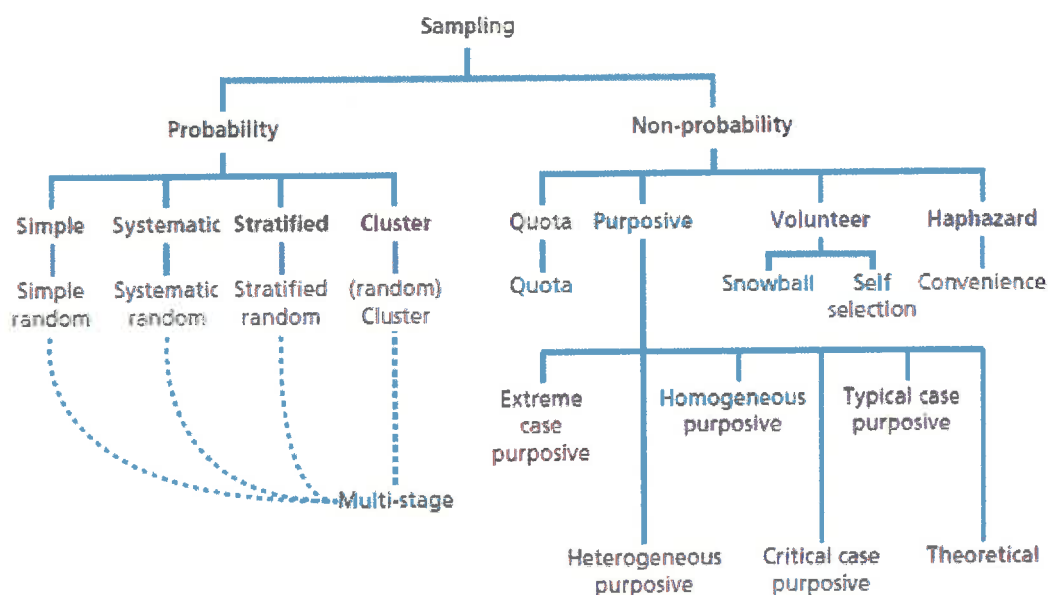
(Source: Dudovskiy:2014)

3.7.1.1 Probability sampling methods

Probability sampling means that elements in the population have some known, nonzero chance of probability of being selected as sample subjects (Sekaran and Bougie, 2016).

Simple Random Sampling, there is a known and equal chance that each particular element in the population can be selected as a subject. If applied appropriately, this sampling design is associated with minimum amount of sampling bias compared to

other sampling methods and the research findings are generalizable due to the representativeness of the sampling technique (Dudovskiy, 2014).

Systematic design chooses every nth element in the population to form part of a sample (Dudovskiy, 2014). The selection of a sample is very convenient and is cost and time efficient however if the sampling interval is deduced, it can bias the population as non-participants will be different from study participants (Dudovskiy, 2014).

Stratified random sampling design divides the population into meaningful non-overlapping subsets and then randomly chooses the subjects from each subset (Sekaran and Bougie, 2016). The method intends to guarantee that the sample represents specific sub-groups or strata (Dudovskiy, 2014). A superior form of sampling compared to simple random sampling in that the process of stratifying reduces sampling error and ensures a greater level of representation from all subgroups.

Cluster sampling is a design where the sample comprises groups or chunks of elements with intragroup heterogeneity an intergroup homogeneity (Sekaran and Bougie, 2016).

3.7.1.2 Non-probability sampling methods

Non-probability sampling means that the elements do not have a known or predetermined chance of being selected as subjects (Sekaran and Bougie, 2016).

Quota sampling is a method of gathering representative data from a specific identified group (Sekaran and Bougie, 2016).

Purposive or judgemental sampling entails choosing subjects who are most advantageously positioned or placed to furnish the researcher with appropriate information.

Haphazard or convenient sampling design collects information from members of the population conveniently accessible to the researcher (Sekaran and Bougie, 2016). In its simplistic and ease of reference research this sampling is useful for pilot studies and generating hypotheses as it can be vulnerable to bias and high level of sampling error. (Dudovskiy, 2014).

A stratified random sampling under the probability sampling method was used to pick a sample for the quantitative data collection for this study. Probability sampling designs portray an objective approach to research in that the sampling is less biased compared to the non-probability sampling designs where there is no randomness involved which is subjected to a lot of bias because not all elements in the population have equal chances to being part of the sample.

Purposive or judgemental sampling was adopted by the researcher for qualitative data collection for this study as it involving subject matter experts advantageously placed to provide information required.

3.8   Sampling Strategy

3.8.1   Quantitative sampling

The quantitative part of this research adopts a proportionate stratified random sampling design under the probability sampling category. The process involved a stratification or segregation of the population into strata, followed by a random selection of subjects

from each stratum (Sekaran and Bougie, 2016). The research sample size is determined through the consideration of two factors;

a) The margin of error or Precision: denotes the positive and negative deviation you allow on your survey results for the sample (Dudovskiy, 2014) or the amount of error which can be tolerated in a study.
b) Confidence level: denotes with certainty how the estimates of the research will hold true for the population (Sekaran and Bougie, 2016).

The population sample was drawn from a total population of the Gauteng PMO staff at DRDLR. The population was divided into exclusive mutual groups that are relevant, appropriate and meaningful in context of this study.

This method of sampling provides an effective representation of all subgroups and ensures a high level of homogeneity due to minimum error term. With a total population of 80 staff involved in projects in the organisation, using a margin of error of 10% and degree of confidence of 90%, a sample size of at least 36 participants was considered adequate for the population of size. A Stratified random sampling technique was used to select participants who included Senior, Middle and Junior Management inclusive of Operational staff within DRDLR.

3.8.2   Qualitative sampling

According to Sekaran (2016), purposive /or judgemental sampling does not aim to draw statistical inference. The subjects are selected on the basis of expertise, personal experience and knowledge on the subject that is being investigated taking great caution that the subjects are chosen to reflect the diversity of the population (Sekaran and Bougie, 2016) and (Cleary et al., 2014). Only 6 participants were chosen as the main objective of qualitative analysis was to have an in-depth understanding of PMO involvement and control within the DRDLR from a small sample. This is different from quantitative analysis which draws inferences based on the principle of large numbers. The researcher identified Chief Director, Directors and Deputy Directors who head up different Directorates in the DRDLR Gauteng that run projects.

3.9　　　Data Collection

The study utilised a questionnaire for quantitative study and interviews for qualitative study to collect data for the research.

Structured questionnaire for quantitative research was used to collect quantitative data on the PMO influence in successful project delivery at DRDLR Annexure 1.　　The questionnaire was structured as follows;

Section A of the questionnaire covered background information such as position held by the respondent in the organisation, Department, educational qualifications and the length of time worked at the organisation.

Sections B, C and D of the questionnaire was based on a 5-point Likert scale and covering the role played by the PMO in project resourcing, project governance and promoting a PMO organisation.

Qualitative interviews utilised open-ended interview questions posed to participants until saturation i.e. when gathering fresh data no longer sparked new insights or new reveals (Creswell, 2014).

The interview guide was structured as follows;

a) What is the degree of influence of the PMO in acquiring resources to support project delivery within the organisation?

b) To what extent does the PMO influence compliance to governance issues within the organisation during the life cycle of the project?

c) What is the level of involvement of the PMO in ensuring appropriate establishment and implementation of a project organisation?

This decision of a mixed study data collection is influenced by Creswell's (2014) notion that the adoption of mixed methods attempt to provide a deeper understanding of a research problem then either the quantitative and qualitative method can provide alone (Creswell, 2014). The approaches used to ensure validity of the research instrument, normality of the data and the credibility of the research findings are discussed below.

3.10   Validity

Validity is demonstrates that the research instrument, technique or process used to measure a concept does indeed measure the intended concept whilst reliability attests to the consistency and stability of the instrument (Sekaran and Bougie, 2016). Before collecting data for the study, the Cronbach's alpha was used to measure the reliability of the research instrument. Cronbach's alpha provides a measure of internal consistency of a test or a test and describes the extent to which all items in a test measure the same concept or construct. It is expressed as a number between 0 and 1. A high correlation of the items in a test increases the value of alpha however the length of the test also adversely reduces the alpha. (Tavakol & Dennick, 2011). To ensure a higher more reliable score of alpha the research questionnaire more related items / variables measuring the project resourcing, project governance and project organisation were added to the research instrument.

3.11   Credibility

According to Anney (2014) this is the certainty that can be assigned to the veracity of the research findings in that it determines whether or not the research findings corroborates the information drawn from the participants' original data and if the participants original views have been interpreted correctly.

Credibility of research results was ensured by the researcher through the following measures;

a) The same questionnaire was used throughout the study to ensure that it realistically measured the influence of the PMO in the DRDLR.

b) The research topic was extensively represented in the gathering of data as all questions posed to the respondents in interviews and questionnaires were of relevance to the study.

c) The instruments were constructed based on the published literature theory on the enablers of successful project delivery in the PMO.

3.12   Pilot study

A pilot study is a small-scale version of a planned study (Cadete, 2017). It is carried out using a small group of participants similar to those to be enrolled in the larger scale study. Pilot studies enable researchers to practice and to assess the effectiveness of their planned data collection and analysis techniques (Doody and Doody, 2015). Pilot studies assist the researcher in detecting problems that could occur with methods so that changes can be made before undertaking the large-scale study. The pilot study answers methodological questions and directs the research planning to make sure that in real life situations the methods do work, and further evaluates how feasible the proposed research process is (Doody and Doody, 2015).

The researcher conducted a pilot study at a Government institution to determine the relevance, completeness and elimination of ambiguity on the questionnaire that was to be used as an instrument to collect data for the study. A total of ten participants (3 Senior, 2 Middle and 2 Junior Management alongside 2 Operational Staff) were invited to participate on the pilot study by answering the questionnaire survey.   Two Senior Managers participated in the pilot interviews for the qualitative study for the structured interviews to test the interview schedule for clarity and non-ambiguity.   The piloting process enabled the researcher to identify and rectify errors on the research instruments before the data was collected.   Through the pilot study the researcher was

able to restructure questions that were found to be ambiguous, unclear and not applicable to the context of PMOs. Cosmetic corrections to the questionnaire were rectified and further questions were prompted by the pilot participants which the researcher had overlooked when created constructing the research instruments.

3.13   Data analysis

Data analysis involves analysing the data gathered statistically to ascertain whether the hypotheses that were generated are supported (Sekaran and Bougie, 2016). The methods adopted in the analysis of quantitative and qualitative data in the study are discussed in depth in the following section.

3.13.1   Quantitative Data Analysis

The SPSS software program was utilised to analyse the quantitative data of the study. The data received through the questionnaire of the study was first coded and captured in a spreadsheet. In coding of data one assigns a number to the participant's responses so they can be entered into a spreadsheet (Sekaran and Bougie, 2016). Before analysis, the coded data was checked for completeness and accuracy to eliminate any errors and identify and manage any outliers.

The data was then exported to SPSS program for comprehensive analysis. Mean scores, medians, frequencies, standard deviations, ranges, kurtosis and skewness were used as measures of central tendency and spread. The statistics were able to give an idea on the influence and involvement of the PMO within DRDLR based on participants' perceptions. Measures of central tendency and measures of spread that were used in the analysis are defined below to get an understanding of how they are calculated and what they meant to this study.

3.13.1.1   Measures of central tendency

a) The Mean is the average of the values divided by the number of the values. It is a measure of central tendency providing an overview.

b) **The Median** is the central item in a group of observations that are arranged in ascending or descending order.

c) **The Mode** highlights observations that do not conform to meaningful representation through the mean or median but are signified by a most frequently occurring phenomenon (Sekaran and Bougie, 2016).

3.13.1.2 Measures of dispersion

Two sets of data may have the same mean but with different dispersion and variability. Dispersion can be measured by range, variance and standard deviation.

a) **The Range** refers to the extreme values in a set of observations minus the extreme low values within a dataset.

b) **The variance** is determined by subtracting the mean from each of the observations in the data set and taking the square of each difference to divide it by the total number observations (Sekaran and Bougie, 2016).

c) **The standard deviation** measures the dispersion for interval and ration scaled data offering an index of the spread of a distribution or the variability in the data. It is the square root of the variance (Sekaran and Bougie, 2016).

The PMO is defined in terms of governance, resourcing and project organisation. Therefore, the influence of governance, resourcing and project organisation on project delivery at DRDLR was measured using a multiple linear regression model. In this case, project delivery was the dependent variable while governance, resourcing and project organisation were independent variables. This model provides factors that have significant influence on project delivery.

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Pairwise association between governance, resourcing, project organisation and project delivery were analysed using Pearson Correlation analysis. Correlation analysis provides significance as well as the strength of the relationship between two variables. Correlation varies between -1 and +1. Correlation of 0 means that there is no relationship while a correlation of +1 means that there is a perfect relation between variables concerned. Correlation values between 0 and 0.1 indicate weak relationship, 0.1 – 0.3 modest, 0.3 – 0.5 moderate, 0.5 – 0.8 strong, 0.8 -0.9 very strong while correlation value of 1 between variables concerned represents a perfect correlation (University of Strathclyde, 2014).

3.13.2   Qualitative Data Analysis

The qualitative data collected for the study was analysed using thematic qualitative data analysis. Qualitative data collection produces large amounts of data requires that the researcher examined by categorisation and coding to identify interesting and salient features of the data (Sekaran and Bougie, 2016, Creswell, 2014).

The researcher transcribed all the data collected from the interview and read through the data to identify salient features of the data before it was coded. Coding is the analytical process through which the qualitative data that has been gathered is reduced, rearranged and integrated to form theory. Allocation of codes to data assisted the researcher to reduce the data into a more manageable amount of units and themes (Sekaran and Bougie, 2016). Categorisation is the process of organising, arranging and classifying coding units.

Once the data was coded and categorised the researcher reduced to discover patterns and relationship to draw conclusion and answer the research study questions through contrasts and comparisons (Sekaran and Bougie, 2016).

Figure 3.5 depicts the qualitative data analysis as discussed above through Creswell's (2014) interactive linear, hierarchical approach that builds from the bottom to the top.

Figure 3.5: Data analysis in qualitative research

Interpreting the Meaning of
Themes/Descriptions

Interrelating Themes/Description
(e.g., grounded theory, case study)

Themes | Description

Validating the
Accuracy of the
Information

Coding the Data
(hand or computer)

Reading Through All Data

Organizing and Preparing
Data for Analysis

Raw Data (transcripts,
fieldnotes, images, etc.)
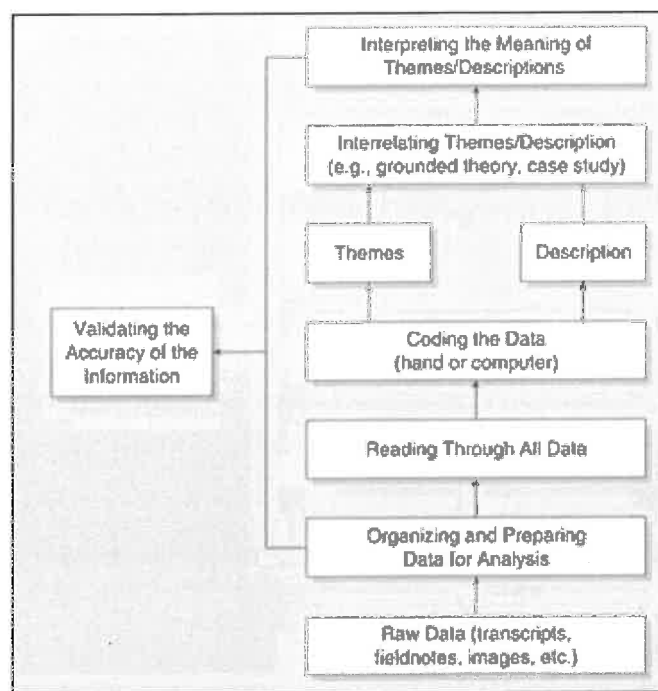
(Source: Creswell, 2014)

3.13.3 Data convergence

It has been ascertained that in this research design two sets of quantitative and qualitative data are analysed separately and then brought together. The analyses of data when using the convergent mixed method may be tricky in that one may not actually not know how to actually merge the quantitative and qualitative data to display the research study findings (Creswell, 2014).

Creswell (2014) identifies three ways of merging the data in mixed methods research studies;

a) **A side-by-side comparison,** Quantitative statistical results are reported first followed by discussion of the qualitative findings (e.g. themes) that either confirm or disconfirm the statistical results or vice versa. The approach is termed a side-by-side approach because within the discussion the researcher compares the two sets of findings, starting with one, then the other.

b) **Transformation** - The two databases are merged by changing qualitative codes or themes into quantitative variables and then combining the two quantitative databases The qualitative themes or codes are counted (and possibly grouped) to form quantitative measures.

c) **Joint display of data** - involves merging the two forms of data in a table or a graph to form a joint display of data. It can take many different forms such as a table that arrays the themes on the horizontal axis and a categorical variable; or a table with key questions or concepts on the vertical axis and then two columns on the horizontal axis indicating qualitative responses and quantitative results to the concepts. The researcher jointly displays both forms of data effectively merging them in a single visual (Creswell, 2014).

The researcher adopted the side by side comparison where findings from quantitative and qualitative were compared and discussed separately.

3.14   Limitation of the study

The study was conducted in DRDLR Gauteng province. The researcher acknowledges that the research study can be carried out on larger scale where the findings could be generalized to a larger population.

3.15   Research ethics

The researcher discussed thoroughly the research topic and purpose of the study with each participant before data was collected to ensure that the participant understood the expectations, that the research was voluntary and that the participant was at liberty to withdraw from the study at any time. Information that was collected from the study was utilised only for the purposes of the study as outlined in the qualitative and quantitative consent forms (Annexure 2 & 3) signed by both the researcher and participant.

Ethical considerations during the study were addressed by the following,

a) Each respondent of the questionnaire and interview was issued with a consent form (Annexure 2 & 3) critically detailing the purpose of the study, expectation required from each respondent and that participation in the study was voluntary.

b) The purpose of the consent form was for the respondents to grant permission to the researcher to interview them and use their responses in the study.

c) The respect, privacy and confidentiality of the study respondents were upheld by the research throughout the study.

d) The personal information of the respondents was kept under strict confidential terms between the study Supervisor and the researcher on a password-controlled account to ensure anonymity of the respondents.

e) The researcher ensured that no physical or financial harm was posed to the research respondents.

f) The research was conducted safely in the comfort of the respondent's place of employment.

3.16 Chapter Conclusion

In this Chapter, the researcher has discussed the methodology and measurements used to determine the degree of involvement and influence PMO have in DRDLF to successfully deliver projects. The location of the research was discussed, the subjects selected for the study and the methods used to analyse the data collected. Chapter 4 and 5 discuss in detail the analysis of the quantitative and qualitative results.

CHAPTER 4

PRESENTATION OF RESULTS

4.1   Introduction

The previous chapter provided details on the methodology that was adopted for the study. In particular, the methodology chapter provided details on the data analysis techniques that were relevant for the study. This chapter first provides quantitative results and then qualitative interview analysis on the involvement and influence of the PMO in the successful delivery of projects within the DRDLR.

QUANTITATIVE RESULTS

The data gathered in the study was based on the questionnaire survey targeting Senior, Middle and Junior Management as well as Operational staff. The broad issues that are covered in this chapter include response rate, reliability of the instrument used, background information of the participants, normality tests, relevant descriptive statistics and inferential statistics to determine factors influencing project performance.

4.2   Response rate

It is important to have a high response rate to ensure that the target population is adequately represented. High response rate produces useful, credible and accurate results. A total of 72 questionnaires were circulated to the target audience as shown in Table 4.1. Out of this, a total 30 employees participated in this exercise giving a response rate of 41.6%.

Table 4.1: Response rate of the study

Position	No. Contacted	No. Participated	Response rate
Snr Management	5	4	80.0
Middle Management	16	11	68.7
Junior Management	26	6	23.0
Operational staff	24	8	33.3
Other	1	1	100
Total	72	30	41.6

4.3   Reliability

Table 4.2 shows the reliability of the instrument based on 3 constructs which included, project resourcing, project governance and project organisation. Cronbach's Alpha was used to measure the reliability of the instrument in this study.   Each one of the constructs measured in Table 4.2 had Cronbach's Alpha values that were significantly greater that the 70% threshold.   In particular the scale of project governance had a very high Cronbach's Alpha of 95.9% indicating an excellent level of internal consistence.

An overall Cronbach's Alpha of 96.2% was achieved in the study as shown in Table 4.2. This is an excellent overall level of internal consistence which exceeds by far the minimum requirement of 70%. Therefore, this confirms that the instrument used in the study was reliable and was able to give consistent results in repeated use.

Table 4.2: Instrument reliability using Cronbach's Alpha

Construct	Number of Items	Cronbach's Alpha (%)
PMO Project resourcing	6	90.6
PMO Governance	7	95.9
PMO Organisation	6	92.6
Overall	**19**	**96.2**

4.4   Background information of participants

Before detailed analysis was carried out, background information of participants according to position, functional departments and academic qualification were analysed. The detailed background information of participants follows in the subsequent subsections below.

4.4.1   Distribution of participant in relation to position

Figure 4.1 represents the distribution of participants according to position. Out of a total of 30, about 13% of the participants were in Senior Management positions within the organisation. Middle Management, Junior Management and Operational staff was almost fairly represented with contributions of about 37%, 20% and 27% to the total participants respectively. Only one participant was a Specialist in Project Management. The distribution in Figure 4.1 demonstrates a fair representation of participants across positions within the organisation. This provided balanced view points on the subject matter across positions.

Figure 4.1: Segregation of participants according to position

	Snr Management	Middle Management	Junior Management	Operational staff	Other
Frequency	4	11	6	8	1
Percent	13.3	36.7	20.0	26.7	3.3
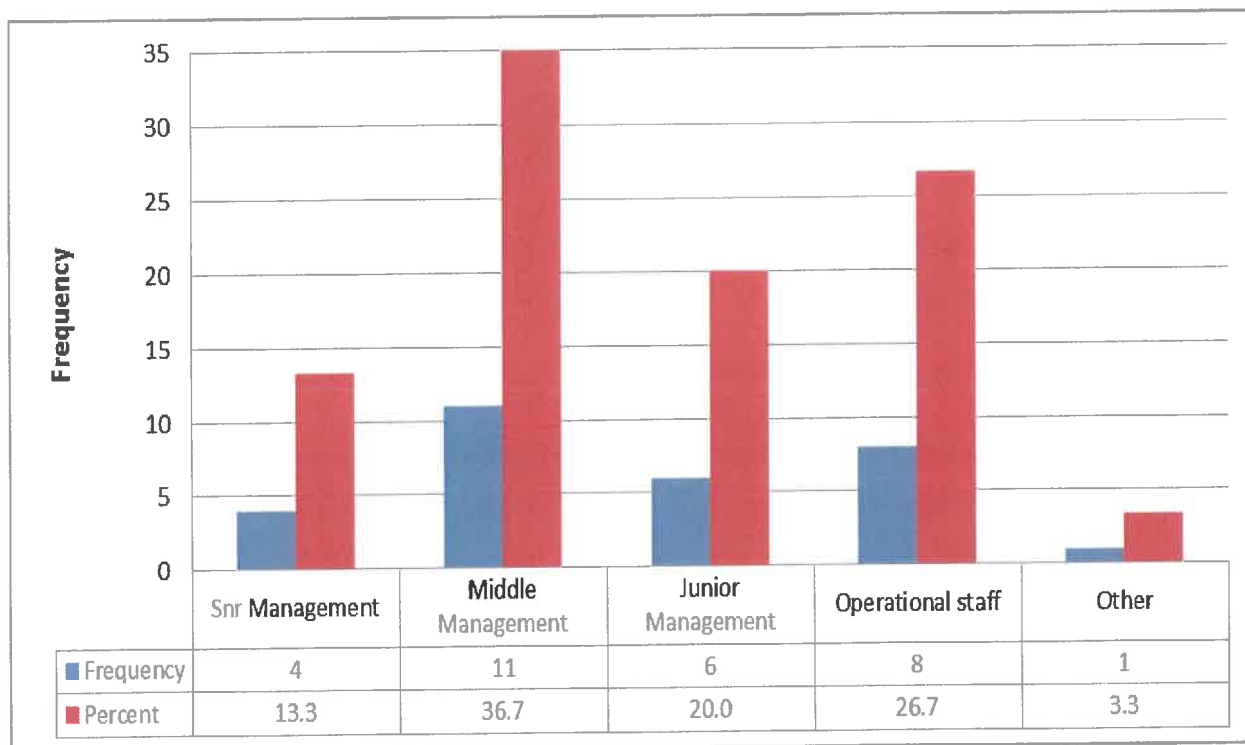
4.4.2   Distribution of participants across functional departments

Figure 4.2 shows the distribution of participants across functional departments within the organisation. The majority of the participants were from EPMO and Corporate Services. Each of the above mentioned functional departments contributed 9.8% to the total of 30 participants each. However, Restitution, Land Reform and Operations contributed about 7.3% to the total. Land Tenure, Land Acquisition, Recapitalisation and LAR were represented by 2 employees each. RADP and Project Implementation were the least represented with 1 employee each participating in this exercise.

Figure 4.2: Distribution of participants according to functional departments

	EPMO	Corpor ate Service s	Restitut ion	Land Reform	Operati ons	REID	Land Tenure	Land Acquisi tion	Recapit alisatio n	LAR	RADP	Project Implem entatio n
Frequency	4	4	3	3	3	3	2	2	2	2	1	1
Percent	9.8	9.8	7.3	7.3	7.3	4.9	4.9	2.4	4.9	2.4	2.4	2.4
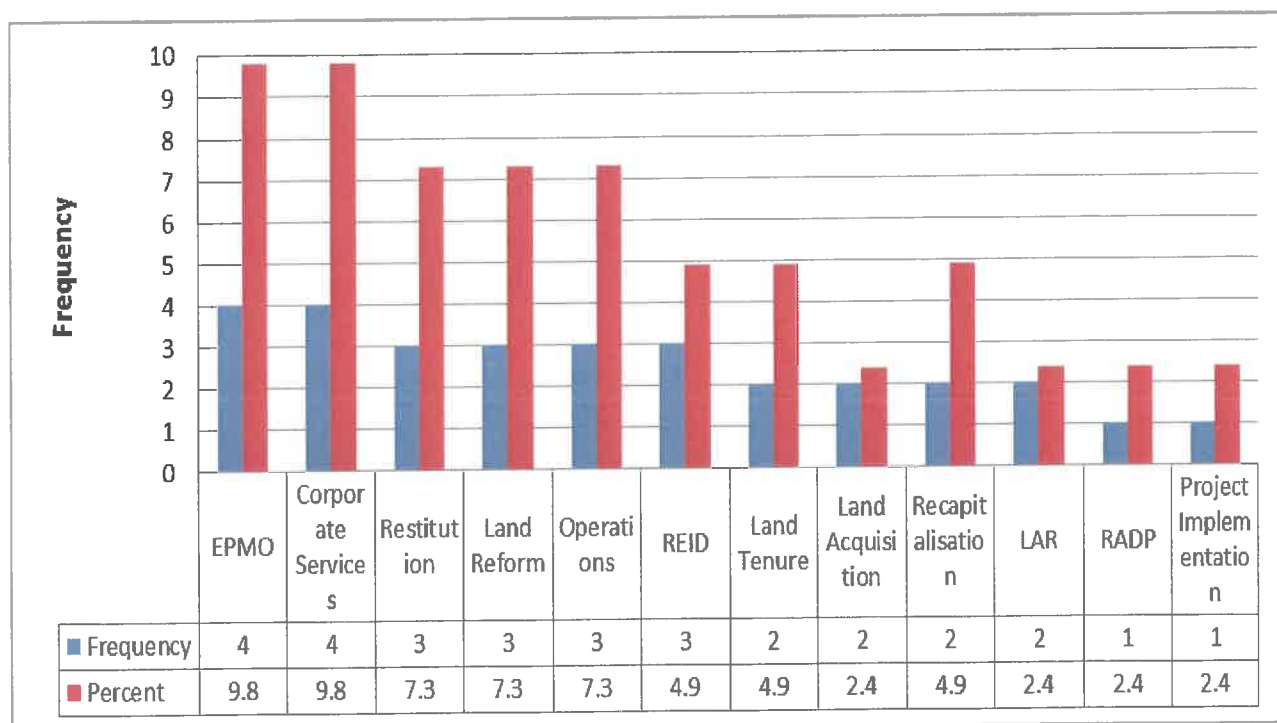
4.4.3   Distribution of participants in relation to academic qualifications

The distribution of participants according to academic qualifications is indicated in Figure 4.3 below. Participants in possession of a Postgraduate degree were the majority contributing about 60% to the total number. About 27% were in possession of a Degree only. This means that 87% of the participants were in possession of at least a degree. The high literacy rate of participants was positive for the study as it helped in providing well informed, credible and accurate contributions on the subject matter of the study.

Figure 4.3: Distribution of participants according to academic qualifications

	Postgraduate	Degree	Diploma	Certificate
Frequency	18	8	2	2
Percent	60.0	26.7	6.7	6.7
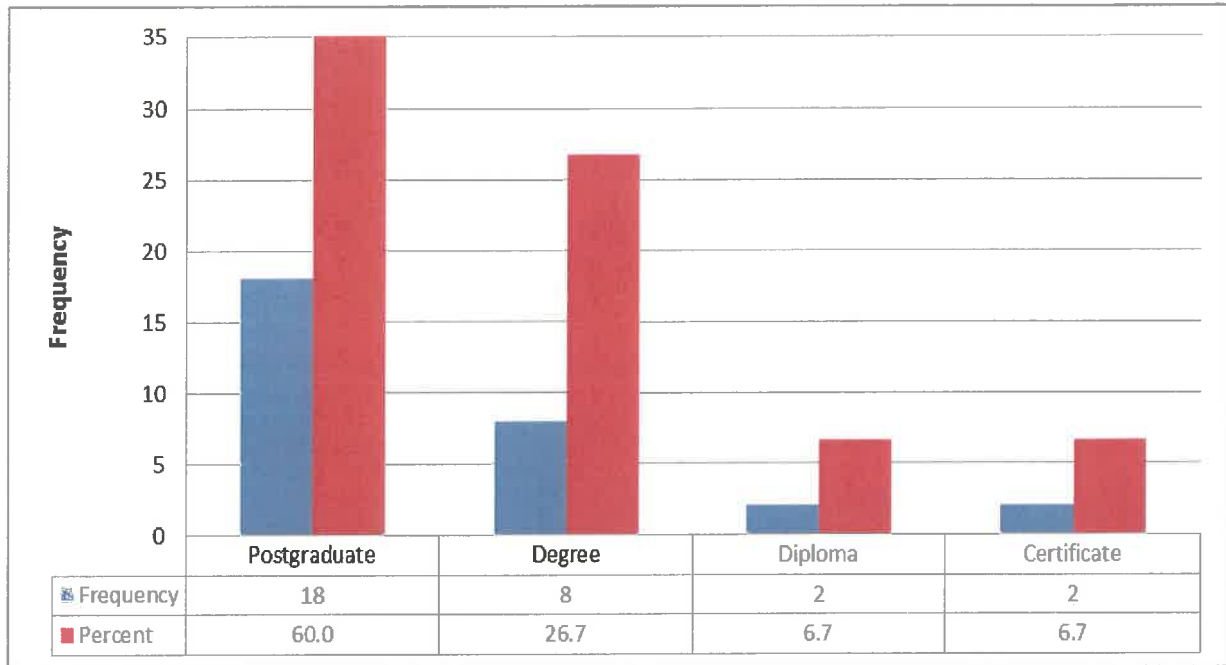
4.5   Normality tests

Before any statistical analysis can be done, it is important to test for the normality of data so that appropriate and relevant statistical procedures can be used for data analysis.   Shapiro-Wilk and Kolmogorov-Smirnorva tests were used to test for the normality of data that was gathered in this study using the following hypothesis formulation;

H_0: Data gathered for the study is normally distributed

H_1: Data gathered for the study is not normally distributed

Table 4.3 indicates the normality tests using the Kolmogorov and Shapiro-Wilk tests. Since the sample size used was less than 50 (n <50), tests associated with Shapiro-Wilk were relevant as opposed to Kolmogorov-Smirnorva. Based on Table 4.3, it was

observed that the p value was more than 0.05 (p > 0.05). H_0 was not rejected suggesting that the data gathered for the study was normally distributed.

Normality tests were also done using Q-Q plots and box plots as shown in Annexure 4. In Q-Q plots the observed points lie very close to the diagonal line suggesting that the data gathered in this study was normal. The box plot was symmetric indicating normal characteristics of the data gathered for the study.

Table 4.3: Normality test using Shapiro-Wilk

	Kolmogorov-Smirnorva			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Variables	0.226	29	0.2304	0.889	29	0.114

4.6 Analysis of the degree of involvement of PMO in the successful delivery of projects within public sector

In this subsection is the analysis of data based on the perceptions of participants on the involvement of PMO in the successful delivery of projects within DRDLR.

The degree of involvement of PMO in delivery of projects within the DRDLR was measured on a 5 point Likert scale ranging from very low to very high. Ratings (measured using mean) of between 1 and 2.4 indicated very low to low involvement while ratings of between 2.5 to 3.4 suggested moderate involvement. However, ratings of 3.5 and above indicated high to very high involvement of PMO in project delivery.

4.6.1 Degree of PMO involvement in project resourcing

Table 4.4 indicates the perception of participants on the PMO involvement in project resourcing. It can be observed that overall the PMO is perceived as having a moderate

involvement in project resourcing. The overall resourcing recorded a moderate score of 2.7 compared to a maximum possible mean score of 5. The PMO was however perceived to be poorly involved in the deployment of staff to projects (B5) and participation in mentoring programs to increase knowledge base (B6). These attributes recorded poor mean scores of 2.4 each compared to a maximum possible score of 5. On the other hand, PMO was perceived to be highly involved in decisions associated with project financing (B1). B1 recorded high and favourable mean score of 3.5 compared to a maximum possible score of 5.

PMO was perceived to be moderately involved in training resources (B2), recruitment of skills (B3) and authority to deciding which resources should be hired for projects (B4). All the above-mentioned attributes recorded moderate mean scores between 2.5 and 2.8.

The extent of variation of the views of the participants on project resourcing was measured using a ratio of standard deviation over mean. Based on Table 4.4 there was no homogeneity on the views of the participants on PMO involvement in project resourcing. All the attributes in project resourcing had high standard deviations that were at least 34% of the mean which demonstrated high variation of opinions.

Table 4.4: Perceptions of participants on PMO involvement in Project Resourcing

Attribute	N	Mean	Median	Mode	Std. Deviation	STDev/Mean%
B1	30	3.5	3	4	1.206	34.5
B2	30	2.7	3	3	1.055	39.1
B3	30	2.7	3	3	1.23	45.1
B4	30	2.6	2	2	1.478	57.5
B5	30	2.4	3	1	1.351	57.0
B6	30	2.4	3	1	1.422	59.3
Resourcing	30	2.7	3	4	1.071	39.7

4.6.2   Degree of PMO involvement in project governance

Table 4.5 illustrates the perception of the participants on the involvement of the PMO in project governance within the DRDLR. PMO was perceived to be moderately involved in project governance. This attribute recorded a moderate mean score of 3.4 compared to a maximum possible score of 5. PMO was also perceived to be moderately involved in ensuring service quality was within stakeholder expectation and the implementation of project processes (C3), sharing information across various project teams (C7) and ensuring project standards were set for the organisation (C1). These attributes recorded moderate mean scores that were between 3.0 and 3.4.

However, PMO was perceived to be highly involved in setting out project standards to be complied with in the organisation, ensuring proper project integration was achieved and design of project processes. The above-mentioned attributes recorded high and favourable mean scores that were at least 3.5 compared to a maximum possible score of 5.

Table 4.5: Degree of PMO involvement in project governance

Attribute	N	Mean	Median	Mode	Std. Deviation	STDev/Mean%
C1	30	3.1	3	3	1.125	36.3
C2	29	3.6	4	3	1.086	30.3
C3	30	3.4	4	4	1.223	35.7
C4	28	3.6	4	5	1.311	36.0
C5	30	3.5	4	5	1.432	41.3
C6	30	3.4	4	5	1.406	41.0
C7	30	3.3	4	4	1.311	40.1
Governance	30	3.4	4	4	1.143	33.6

4.6.3 Degree of PMO involvement in project organisation

Table 4.6 presents the participant's views on the PMO involvement in project organisation within the DRDLR. Participants were of the view that PMO was generally highly involved in project organisation. This attribute recorded a favourable score of 3.6 compared to a maximum possible score of 5. PMO was also perceived to be highly involved in regular reporting of project performance (D5), creating an environment that promotes project integration (D1) and effective flow of information across project teams (D3). D1, D3 and D5 recorded high and favourable scores that were at least 3.5 compared to a maximum possible score of 5.

On the other hand, PMO was perceived to be moderately involved in executive representation relating to important issues on projects (D4), definition of roles and responsibilities for employees and structural changes that relate to projects. All the above attributes recorded moderate mean scores that were between 2.5 and 3.4 from a maximum possible score of 5. In addition, the overall performance of the PMO within the organisation was perceived to be moderate and recorded a mean score of 2.9.

Table 4.6: Degree of PMO involvement in project organisation

Attribute	N	Mean	Median	Mode	Std. Deviation	STDev/Mean%
D1	30	3.5	4	5	1.383	39.5
D2	30	2.8	3	2	1.251	45.2
D3	29	3.5	4	4	1.257	35.9
D4	30	3.0	3	3	1.245	41.9
D5	30	3.7	4	5	1.442	39.0
D6	30	2.9	3	1	1.479	51.5
Organisation	30	3.6	3	4	1.146	31.8
Performance	28	2.9	3	3	1.166	40.3

4.6.4   Determination of the relationship between project performance, project resourcing, project governance and project organisation

4.6.4.1   Determination of the relationship between project performance, project resourcing, project governance and project organisation using correlation analysis

Table 4.7 below indicates the association between project resourcing, project governance, project organisation and project performance using the correlation analysis. Based on Table 4.7 it was observed that resourcing showed positive, strong and significant ($p < 0.01$) relationships with project governance, project organisation and project performance. The correlation coefficients between resourcing, governance, organisation and performance were at least 0.7. Likewise, project governance showed positive, strong and significant ($p < 0.01$) relationship with organisation and project performance. All attributes measured demonstrated positive, strong and significant ($p < 0.01$) relationships with performance. The relationship between performance, Resourcing, Governance and Project Organisation demonstrated significant ($p < 0.01$), strong and positive correlation with correlation coefficients of at least 0.675.

Table 4.7: Relationship between project performance, project resourcing, project governance and project organisation

		[A]	[B]	[C]	[D]
Resourcing [A]	Correlation	1	.792**	.801**	.701**
	Sig.		0.00	0.00	0.00
Governance [B]	Correlation	.792**	1	.715**	.675**
	Sig.	0.00		0.00	0.00
Organisation [C]	Correlation	.801**	.715**	1	.786**
	Sig.	0.00	0.00		0.00
Performance [D]	Correlation	.701**	.675**	.786**	1
	Sig.	0.00	0.00	0.00	

** = P< 0.0, *= p < 0.05

4.6.4.2 Determining factors affecting project performance using the linear regression model.

Factors influencing project performance were determined using multiple linear regression as indicated in Table 4.8. Project performance was a dependent variable while project resourcing, project governance and project organisation were independent variables. The significance of mediating effect of Position, Department, Qualifications and Experience were also tested. Based on Table 4.8 it was observed that only project organisation has a significant ($p < 0.01$) effect on project performance. There was no statistical evidence to suggest that project resourcing and project governance had an effect on project performance. Again, there was no evidence to suggest that position Department, Qualification and Experience had a mediating effect on the relationship between project performance and the relevant variables measured.

Table 4.8: Determining factors affecting project performance using the linear regression model

Variable	Unstandardised Coeff		Std Coeff	t	Sig.
	B	Std. Error	Beta		
(Constant)	0.434	1.049		0.413	0.684
Resourcing	-0.091	0.288	-0.084	-0.316	0.756
Governance	0.232	0.242	0.217	0.955	0.352
Organisation	0.706	0.233	0.705	3.035	0.007
Position	-0.131	0.213	-0.122	-0.615	0.546
Department	-0.072	0.046	-0.233	-1.572	0.133
Qualification	0.4	0.227	0.315	1.764	0.095
Experience	-0.044	0.185	-0.034	-0.235	0.817

4.6.5 Evaluation of model adequacy

Model adequacy was evaluated using Analysis of Variance (ANOVA) and R^2. The details of each evaluation method are presented below.

4.6.5.1   Evaluation of model adequacy using ANOVA

Table 4.9 shows model adequacy evaluation using Analysis of Variance. It is observed that the regression model was significant (p <0.01).   This means that project performance was adequately predicted using project resourcing, project governance and project organisation.

Table 4.9: Evaluation of model adequacy using ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	25.195	7	3.599	6.36	0.001
Residual	10.189	18	0.566		
Total	35.385	25			

4.6.5.2   Evaluation of model adequacy using R^2

Table 4.10 indicates model adequacy using R^2. It was observed that an R^2 value of 84% was achieved. This means that project Resourcing, Project Organisation and Project Governance explained a significant 84% of the variance in Project Performance. This also means that the regression model above is credible to predict project performance.

Table 4.10: Evaluation of model using R-square

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.844	0.712	0.6	0.752

4.7   Analysis of the degree of influence of PMO in in the successful delivery of projects within public sector

Below is the analysis of data based on the perceptions of participants on the influence of PMO in the successful delivery of projects within DRDLR.

The degree of influence of PMO in delivery of projects within public sector was measured on a 5 point Likert scale ranging from very low to very high. Ratings (measured using mean) of between 1 and 2.4 indicated very low to low influence while ratings of between 2.5 to 3.4 suggested moderate influence. However, ratings of 3.5 and above indicated high to very high influence of PMO in successful project delivery.

4.7.1   Degree of PMO influence in project resourcing

Table 4.11 indicates the perception of participants on the PMO influence in project resourcing. It can be observed that on the whole PMO was perceived to have a low influence on project resourcing. Overall influence of PMO on project resourcing recorded a low mean score of 2.4 from a maximum possible score of 5. In addition, PMO was perceived to have a low influence on authorising people to be hired for projects (B4), deployment of staff resources to projects (B5) and mentorship programs (B6). Attributes B4, B5 and B6 recorded adverse mean scores that were less than 2.5 compared to a maximum possible score of 5. PMO was perceived to have moderate level of influence on recruitment of skills (B3) and allocation of training resources (B2). Attributes B3 and B2 recorded moderate mean scores of 2.7 and 2.5 compared to a maximum possible score of 5. On the contrary, PMO was perceived to have high level of influence on decisions pertaining to project financing (B1). Attribute B1 recorded high and favourable mean score of 3.5 when compare to a maximum possible score of 5.

According to Table 4.11 there was no homogeneity on the views of the participants on PMO influence on project resourcing. All the attributes in project resourcing had high standard deviations that were at least 28% of the mean which demonstrated high variation of opinions on each attribute measured.

Table 4.11: Degree of PMO influence in project resourcing

Attribute	N	Mean	Median	Mode	Std. Deviation	STDev/Mean%
B1	29	3.5	3	4	1.012	28.9
B2	29	2.5	2	2	0.986	39.8
B3	29	2.7	3	2	1.233	46.4
B4	29	2.4	2	1	1.479	61.6
B5	29	2.3	2	1	1.317	56.3
B6	29	2.4	3	1	1.374	57.3
Resourcing	29	2.4	2	2	1.042	43.4

4.7.2   Degree of PMO influence in project governance

The PMO influence on project governance within the DRDLR is illustrated in Table 4.12. PMO was perceived to have moderate level of influence on all governance elements that were measured that included setting of project standards, ensuring project standards are complied with, project integration, designing of project processes and sharing of project information across project teams. All the above-mentioned attributes recorded moderate mean scores that were between 2.8 and 3.4 compared to a maximum possible score of 5.

Based on Table 4.12 it was observed that there was no homogeneity on the views of the participants on PMO influence on project governance. All the attributes in project governance had high standard deviations that were at least 38% of the mean which demonstrated high variation of opinions on each attribute measured.

Table 4.12: Degree of influence in project governance

Attribute	N	Mean	Median	Mode	Std. Deviation	STDev/Mean%
C1	28	2.9	3	3	1.215	41.5
C2	27	3.3	4	4	1.259	38.6
C3	28	3.1	3	2a	1.433	45.6
C4	27	3.3	3	5	1.414	42.5
C5	28	3.4	3	3	1.397	41.2
C6	28	3.3	3	5	1.467	44.2
C7	28	3.1	3	4	1.38	43.9
Governance	28	3.2	3.07	4	1.239	38.6

4.7.3 Degree of PMO influence in project organisation

The influence of PMO on project organisation is exhibited in Table 4.13. An overall moderate rating of 3.1 was recorded for project organisation. PMO was also perceived to have moderate level of influence on ensuring effective flow of information across project teams (D3), defining roles and responsibilities of employees (D6), executive representation to influence buy in on project issues (D4) and structural changes relating to projects (D2). The above-mentioned attributes recorded moderate mean scores of between 2.5 and 3.4 compared to a maximum possible score of 5. The overall project performance was perceived to be moderate with a mean score of 3.0 while regular project reporting to management recorded high and favourable score of 3.7 when compared to a maximum score of 5.

Based on Table 4.13 it was observed that there was no homogeneity on the views of the participants on PMO influence on project organisation. All the attributes in project organisation had high standard deviations that were at least 38% of the mean which demonstrated high variation of opinions on each project organisation attribute that was measured.

Table 4.13: Degree of PMO influence in project organisation

Attribute	N	Mean	Median	Mode	Std. Deviation	STDev/Mean%
D1	29	3.5	4	5	1.378	39.9
D2	28	2.6	2	2	1.317	51.2
D3	29	3.1	3	4	1.235	39.8
D4	29	2.8	3	3	1.284	45.4
D5	29	3.7	4	5	1.421	38.8
D6	29	2.9	3	2a	1.438	49.1
Organisation	29	3.1	3	4	1.182	38.1
Performance	27	3.0	3	3	1.192	39.2

4.7.4   Determination of the relationship between project performance, project resourcing, project governance and project organisation

4.7.4.1   Determination of the relationship between project performance, project resourcing, project governance and project organisation using correlation analysis.

Table 4.14 displays the relationship between project resourcing, project governance, project organisation and project performance using Pearson correlation analysis. The relationship between project resourcing, project governance and project organisation all showed strong, positive and significant ($p < 0.01$) relationships with correlation coefficients that were at least 0.685. Similarly, project governance's association with project organisation and project performance showed a strong, positive and significant ($p < 0.01$) with correlation coefficients of 0.891, and 0.617 respectively with project performance. Project performance showed a positive, strong and significant ($p < 0.01$) relationship with project Resourcing and Project Governance and recorded correlation coefficients of 0.685 and 0.638 respectively.

Table 4.14: Relationship between project performance, project resourcing, project governance and project organisation

		[A]	[B]	[C]	[D]
Resourcing [A]	Correlation	1	.871**	.811**	.685**
	Sig.		0.00	0.00	0.00
Governance [B]	Correlation	.871**	1	.891**	.617**
	Sig.	0.00		0.00	0.00
Organisation [C]	Correlation	.811**	.891**	1	.638**
	Sig.	0.00	0.00		0.00
Performance [D]	Correlation	.685**	.617**	.638**	1
	Sig.	0.00	0.00	0.00	

** = P< 0.0, *= p < 0.05

4.7.4.2 Factors affecting project performance using multiple linear regression

Table 4.15 demonstrates the factors that influence project performance using multiple linear regression. Project performance was a dependent variable while project resourcing, project governance and project organisation were independent variables. There was no statistical evidence to suggest that project resourcing, project organisation and project governance had a significant ($p > 0.05$) influence on project performance. Again, there was no evidence to suggest that Position Department, Qualification and Experience had a significant ($p > 0.05$) mediating effect on the relationship between project performance and the relevant variables measured.

Table 4.15: Factors affecting project performance using multiple linear regression

Model	Unstandardized Coeff		Std Coeff	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.353	1.088		1.24	0.23
Position	-0.36	0.298	-0.297	-1.21	0.24
Department	-0.053	0.059	-0.171	-0.91	0.38
Qualification	0.331	0.341	0.234	0.97	0.35
Experience	0.04	0.191	0.038	0.21	0.84
Resourcing	0.632	0.422	0.559	1.50	0.15
Governance	-0.08	0.473	-0.081	-0.17	0.87
Organisation	0.282	0.407	0.28	0.69	0.50

4.7.5 Evaluation of model adequacy

4.7.5.1 Evaluation of model adequacy using Analysis of Variance (ANOVA)

Table 4.16 illustrates regression model adequacy using ANOVA. It is noted that the regression model was significant ($p < 0.05$). This indicates that project performance was adequately predicted by project resourcing, project governance and project organisation.

Table 4.16: Model adequacy evaluation using ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	16.83	7	2.404	2.564	0.046
Residual	15.004	16	0.938		
Total	31.833	23			

4.7.5.2 Evaluation of model adequacy using R^2

Table 4.17 indicates that a R^2 of 72.3% was achieved. This indicates that Project Resourcing, Project Organisation and Project Governance explained a significant 72.3% of the variance in Project Performance. Therefore, this means that the regression model above is credible to predict project performance.

Table 4.17: Evaluation of model accuracy using R-square

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	
1	0.727	0.529	0.322	0.968	

QUALITATIVE RESULTS

The analysis of the qualitative results was based on data that was gathered from interview sessions from informed senior and executive personnel working with DRDLR in South Africa.

Different ideas or themes that were emerging were first coded in order to build up a comprehensive understanding of the opinions of participants on the subject matter under investigation. Thematic analysis was used to analyse the qualitative and coded data on involvement and influence of the PMO in the successful delivery of projects within the DRDLR in South Africa. The main thrust of thematic analysis was to identify patterns of meaning across dataset in order to answer the main research questions of the study. Patterns were identified through the process of data familiarisation, data coding, and theme development.

Inductive (theme development is based on the content of the data) and deductive (theme development is based or directed by existing theoretical concepts) thematic analysis approaches were applied in this study in order to develop themes based on available literature and on the views of the participants of the study who were employees of DRDLR in South Africa. The qualitative data based from interviews that involved 6 senior executives from DRDLR were initially read a number of times in order to familiarise with the content.

The whole data set created from the responses of the 6 participants was summarised. The researcher ensured that at every stage of the analysis process important features of the data that could be relevant in answering the research questions of the study was identified.

4.8 Core themes

Detailed analysis of the study results follows in the subsections below. Three core themes on the involvement and influence of the PMO in the successful delivery of projects within the DRDLR were identified. These were;

a) **Influence of the PMO in acquiring resources to support projects**: The idea here was to measure the perceptions of participants on the degree of the influence of PMO in acquiring resources to support project delivery within the organisation. This was subdivided into 5 subthemes which included Project financing, Resource training, Recruitment of skills, Resource deployment and Resource optimisation.

b) **PMO influence on governance compliance**: This intended to gather participants' views on the extent of the influence of PMO in ensuring compliance with governance prescripts within the organisation during the life cycle of the project. This was subdivided into 4 subthemes that included compliance with creation of project standards and framework, responsibility to implement standards and framework, project QA and project governing structures and committees.

c) **PMO involvement in project organisation**: This intended to gather participants' views on the level of involvement of the PMO in ensuring appropriate establishment and implementation of a project organisation. This was subdivided

into 5 subthemes that included Centre of excellence, integration of projects, effective flow of information across projects, executive representation of PMO and regular project reporting.

4.9 Background information of participants

Table 5.1 illustrates the profiles of employees who participated in this study. A total of 6 senior executive personnel from DRDLR were interviewed to solicit for their opinions on the involvement and influence of PMO in the successful delivery of projects within the organisation. Of the 6 participants that were interviewed, 2 were Directors, 3 were Deputy Directors and the remaining participant was a Chief Director. A total of 3 participants were from EPMO departmental unit while the other 3 were from REID, Restitution and LAR departments as shown in Table 5.1.

Table 4.18: Profile of participants across position and department

Respondent	Position/Role	Department
Respondent 1	Deputy Director	EPMO
Respondent 2	Chief Director	EPMO
Respondent 3	Deputy Director	EPMO
Respondent 4	Deputy Director	REID
Respondent 5	Director	Restitution
Respondent 6	Director	LAR

4.10 THEME 1: Influence of PMO in acquiring resources to support projects

This theme was subdivided into Project financing, Resource training, Recruitment of skills, Resource deployment and Resource optimisation. The opinions of participants on the above subthemes follow below.

4.10.6   SUB THEME 1: Influence of PMO in Project financing

All the 6 participants were of the opinion that PMO does not have any influence in financing projects within the organisation. In particular, Respondent 1 reported;

"Project financing is a responsibility of business units and has nothing to do with PMO"

In support of the above view, Respondent 2 narrated as follows;

"PMO does not have any influence in financing projects within the organisation but is only given funds to create and run frameworks".

Furthermore, Respondent 3 was of the view that project financing is approved by committees at National level while Respondent 4 was of the view that authority to finance projects within the organisation lies with Director General and not PMO.

4.10.7   SUB THEME 2: Influence of PMO in resource training

All the participants excluding Respondent 5 were of the view that PMO within DRDLR has an influence in resource training. Respondents 1, 2, 3, 4 and 6 were of the suggestion that PMO rolls out and facilitates training of officials on project management principles and fundamentals. They further claimed that PMO has an influence in gathering the necessary resources for training personnel in relevant project management principles. However, Respondent 5 reported as follows;

"Any training of personnel within the organisation including training in project management is the prerogative of the Human Resources department and PMO has no influence on this".

4.10.8   SUB THEME 3: Influence of PMO in recruitment of skills

According to Respondent 2, Respondent 3, Respondent 4, Respondent 5 and Respondent 6, PMO has absolutely no influence and is not in any way involved in the

recruitment of skills within the organisation. However, Respondent 1 narrated as follows;

"Even though PMO does not have any influence in the recruitment of skills within the organisation, it gets sporadic invitations to participate in some interviews that are usually relevant to PMO and project management".

4.10.9 SUB THEME 4: Influence of PMO in resource deployment and resource optimisation

A total of 4 out of 6 participants (which are Respondent 1, 2, 3, 4) suggested that PMO has no authority in the deployment and optimisation of resources within the organisation. However, Respondent 5 and 6 were of the opinion that each business unit including PMO is responsible for the deployment and optimisation of resources. However, Respondent 2 reported as follows;

"Even though PMO does not have authority on resource deployment, it provides guidance on the distribution of resources and optimisation during use".

In addition to the above view point, Respondent 3 stated;

"The deployment and optimisation of resources is haphazard and the authority to do this lies with project teams and business units".

4.11 THEME 2: Influence of PMO on compliance with governance prescripts

This theme was subdivided into 4 subthemes that included creation of project standards and framework, responsibility to implement standards and framework, project QA and project governing structures and committees. The opinions of participants on the above subthemes follow below.

4.11.1 SUB THEME 1: Influence of PMO on creation of project standards and framework

Respondent 1, 2 and 3 were of the opinion that within the organisation PMO has a clear mandate and influence to create project standards and frameworks. In fact, Respondent 1 suggested that PMO runs governance committees of which project standards and frameworks are part and parcel of essentials that are discussed in these committees. Respondent 2 reported that part of the responsibilities of the PMO within the organisation is to create and publish project standards and frameworks. On this same point Respondent 3 narrated as follows;

"One of the key responsibilities of PMO within the organisation is to create methodologies, project standards and frameworks. By virtue of these responsibilities, PMO is accountable and therefore has a lot of influence on project standards and frameworks creation".

However, Respondent 4, 5 and 6 suggested that PMO does not have much influence on project standards and frameworks creation as this was the responsibilities of relevant business units. Respondent 5 even went further to state that the organisation does not have any form of standardisation.

4.11.2 SUB THEME 2: Influence of PMO on standards and framework implementation

According to Respondent 1, 2, 3, 4 and Respondent 6 PMO has a clear mandate and influence to create project standards and frameworks but is generally not involved much in the deployment or implementation of project standards and frameworks. Respondent 1, 2, 3, 4 and 6, believe the responsibility to implement project standards and frameworks lies with business units. However, Respondent 5 reported that PMO implements its own standards and frameworks only.

4.11.3   SUB THEME 3: Influence of PMO on project quality assurance

According to Respondent 1, 3 and 6, quality assurance within the organisation is one of the responsibilities of PMO. However, Respondent 2 was of the opinion that quality assurance is only done during site visits of scheduled and ad hoc audits within the organisation. Respondent 2 pointed out that PMO does not have much influence on quality assurance of projects within DRDLR. In support of Respondent 2 point of view, Respondent 5 reported as follows;

"PMO is not responsible for the quality assurance for all the projects within the organisation. However, PMO does quality assurance for its own projects as a unit".

Respondent 4 was very critical in his assessment as he suggested that the organisation hardly does project quality assurance. He further suggested that DRDLR is very reactive and hardly proactive in doing project quality assurance to ensure that products and services offered by the organisation meet certain standards of quality to improve efficiency of delivery.

4.11.4   SUB THEME 4: Influence of PMO on project governing structures and committees

According to Respondent 1, 2 and 4, PMO is not involved in project governance within the organisation. As a result of this, PMO does not have any influence on project governing structures and committees. However, Respondent 6 reported as follows;

"PMO is involved in project governing structures and committees within our organisation through designing and maintaining of project systems only."

On the other hand, Respondent 5 suggested that PMO is part of the committee that is responsible for project governing structures. He further elaborated that PMO on its own

does not have the mandate to govern structures and committees for the organisation. Respondent 3 was of the view that DRDLR does not have any visible project governance and as such PMO has no influence on project governing structures and committees.

4.12   THEME 3: PMO involvement in project organisation:

This theme was subdivided into 5 subthemes that included Centre of excellence, Integration of projects, Effective flow of information across all projects, Executive representation of PMO and Regular project reporting. The opinions of participants on the above subthemes follow below.

4.12.1   SUB THEME 1: Involvement of PMO on centre of excellence

According to Respondent 1, 2, 4 and 6, PMO within DRDLR has a long way to go before it can be involved in the centre of excellence where there is a creation of standard economies of repetition. Furthermore, Respondent 3 was convinced that PMO within the organisation is currently not involved in the centre of excellence. However, only Respondent 5 suggested that PMO within DRDLR is currently involved in the centre of excellence albeit at a very low extent to warrant some notice.

4.12.2   SUB THEME 2: Involvement of PMO on integration of projects

Respondent 2, 3, 5 and 6 reported that there is currently very minimal project integration that is done within the organisation. When integration of project is performed within DRDLR, PMO is not involved much. Similarly, Respondent 4 reported as follows;

"There is no project integration taking place within the organisation everything is done in silos per Business Unit. Hence, PMO is not involved at all in project integration"

However, Respondent 1 suggested that PMO do get involved in integration of projects within the organisation. However, he emphasised that PMO get involved only in projects that are interdependent and can mutually support each other to provide a significant benefit.

4.12.3   SUB THEME 3: Involvement of PMO on effective flow of information

Respondent 1 was of the view that share of information across project teams is very critical to keep team members updated with relevant current affairs, new technologies and trends that are significant within project management. However, Respondent 1 expressed disappointment at the minimal involvement of PMO in ensuring effective flow of relevant information across project teams within DRDLR. Further to this, Respondent 2 and 3 suggested that since most business units within the organisation operate in silos, there is no one who is obliged to relay critical information and this also includes PMO as a unit.

However, Respondent 4, Respondent 5 and Respondent 6 suggested that PMO is involved in the effective flow of information across project teams. Respondent 4 was of the idea that PMO uses different report documents from the operations departments to communicate relevant information to stakeholders which also includes project teams. Respondent 5 and Respondent 6 suggested that PMO gets involved in communication of information to project teams particularly for projects that are interrelated.

4.12.4   SUB THEME 4: Involvement of PMO on executive representation

According to Respondent 2, 3, 4 and 6, PMO unit does not have any representatives within the executive committees of the organisation. They further expressed that PMO personnel do not have much authority and can hardly make important decisions at the highest level that can improve the organisation. However, Respondent 1, 2 and 5

differed slightly in their opinion. They suggested that PMO unit has representatives in executive committees of the organisation although minimal to make significant impact that can put PMO on the spotlight.

4.12.5 SUB THEME 5: Involvement of PMO on regular project reporting

Project reporting is one of the most important elements that provides management with information on the progress and overall performance of projects. Respondent 1, 5 and 6 were of the opinion that PMO unit provides project reports every month to management for informed decision making that can improve the organisation.

Despite that PMO unit within the our organisation is expected to provide regular reports as per its mandate, Respondent 2 stated as follows;

"Our PMO unit is inconsistent when it comes to providing project reports and when they do; most of these reports are hardly accurate and cannot be relied upon for good decisions that can improve the organisation"

However, Respondent 4 indicated as follows;

"Even though PMO unit within our organisation is enthusiastic to provide regular and accurate reports to management for decision making, it is usually hampered by lack of resources such as finance, infrastructure and at times short supply of human resources"

Respondent 3 also stated that PMO unit within DRDLR uses manual reports as well as system generated reports. He emphasised that the two reports (manual and system generated reports) are usually at variance and this causes a dilemma when management is faced with making a decision.

4.13   How PMO is perceived within the organisation

PMO unit is perceived differently by different people depending on the understanding of its role and interaction within this unit. Respondent 3 suggested that PMO was rejected within DRDLR and is not recognized at all. Despite the existence of PMO within the organisation, Respondent 2 suggested that it does not add any value to the organisation besides being intrusive and only naming and shaming some colleagues at the workplace. Similarly, to this, Respondent 3 and Respondent 6 perceive PMO as a departmental unit that has been created specifically for naming and shaming employees within the organisation.

Respondent 1 and 5 perceive PMO as a unit that is mandated to effectively monitor project progress within the organisation. They also see PMO as a unit that has the responsibility of developing project standards and framework, project structures and dedicate some of its time to developing targets and reporting.

4.14   Chapter Conclusion

This chapter provided an analysis of quantitative research findings with specific reference to the perception of the participants that participated in the study by answering the questionnaire. The qualitative analysis results were presented based on data gathered from interview sessions from informed senior and executive personnel working in the DRDLR. The profile of the participants in terms of position and functional departments was described. The next chapter discusses the research findings and puts them into context with published literature on the PMO, its influence and involvement in successful project delivery.

CHAPTER 5

DISCUSSION OF FINDINGS

4.1 Introduction

The previous chapter provided data analysis on the degree of influence and involvement of PMOs in the management of projects to ensure successful project delivery in a public sector organisation. The analysis was based on both quantitative and qualitative approaches. The data was gathered using a questionnaire and interview protocol in order to achieve the objectives of the study which were as follows;

a) To determine the influence of PMO in acquiring resources to support project delivery within the organisation.

b) To ascertain the PMO influence on governance issues within the organisation during the lifecycle of the project.

c) To identify the level of involvement of the PMO in ensuring appropriate establishment and implementation of a project organisation.

d) To make recommendations on the relevance of PMOs, in public sector projects

This chapter provides discussions where the quantitative and qualitative findings of the study are compared to each other and cross referenced to the relevant literature in an effort to identify departure points to base the recommendations that will be made.

4.2 Discussion on involvement of PMO in project resourcing

The quantitative results on the involvement of the PMO in project resourcing revealed that the PMO was moderately involved in project resourcing. The results showed that the PMO was moderately involved in all project resourcing elements such as project finance decisions, training resources and authority to determine who gets hired in projects. On the other hand, qualitative findings revealed that the PMO had no

involvement in project resourcing in the organisation. Both qualitative and quantitative results were contradictory to the theories published by Khan (2017) and van der Linde and Steyn (2016) which emphasise that a PMO has an important role and should be involved in project resource management which includes management development, training, skills development and should be involved in the continuous evaluation of the competencies of project managers in order to create and manage professional development initiatives that are critical in supporting the organisation to achieve its' goals.

4.3   Discussion on involvement of PMO in project governance

Quantitative findings indicated that the PMO had moderate involvement in project governance. The PMO was perceived to have moderate involvement in service quality provision, sharing of information across projects and setting project standards. Qualitative findings revealed that although the PMO was moderately involved in setting up projects standards and creating project frameworks it was not involved in the implementation and ensuring compliance of standards in the organisation which was the sole responsibility of the business units in the organisation.

These findings are contrary to published theory which indicate that the PMO should be built around an enforcement model, that focuses on implementation of standards, processes and governance that best ensures project success in the organisation (Reddy and Priyadarshini, 2016). Reddy and Priyadarshini, (2016) further stresses that project success in an organisation is strengthened through a governance consisting of close cooperation between project owner and project manager throughout all phases of the project life cycle Hjelmbrekke et al., (2014). The findings of the study show that this is lacking in the organisation.

4.4   Discussion on involvement of PMO in project organisation

Quantitative results revealed that the PMO was highly involved in project organisation. It was established that the PMO was involved in regular project reporting, promoting interaction, project integration and effective flow information across project teams. However, the quantitative results showed that there was very low PMO executive representation to support critical issues pertaining to projects.

Qualitative findings partly agreed with the quantitative findings in that the PMO lacked executive level representation in the organisation. However, qualitative findings contradicted with quantitative results as it revealed that the PMO still had a long way to becoming a centre of excellence that contributes to a project organisation. Qualitative results also revealed that the PMO was not involved in implementing project standards and frameworks and effective flow of information. Despite this the PMO was perceived to be involved in project reporting.

Theory by Hubbard et al., (2015) demonstrates that successful project delivery by a PMO can be optimally achieved when the PMO has full involvement in structural position within the organisation and with a visible presence in executive positions within the organisation. The qualitative results agree with the notion of Hill (2013) that the organisation still has a long way to go to reach the maturity stage of being a centre of excellence as the PMO was still falling short on involvement in resource utilisation, providing and implementing repeatable project methodologies and integration across projects in the organisation.

4.5   Discussion on influence of PMO in project resourcing

Quantitative results indicated that the influence of the PMO in project resourcing was generally very low. In particular the results showed the PMO was having a very low

influence on authority to hire project staff, deployment of staff resources to projects and mentoring programs in the organisation. However, it was perceived to have an influence on the allocation of training resources and a high influence on project financing decision in the organisation.

Qualitative results indicated that the PMO had no influence on project financing, recruitment of skills, and resource deployment. The qualitative results agreed with quantitative results in the fact that the PMO has some influence in training of staff in project management. These results are in agreement with the theory of Bailey, (2015) which alludes that the PMO should play a vital influencial role in resource management as it can provide extremely valuable knowledge when hiring staff for projects. Khan, (2016) supports Bailey's (2015) theory and agrees that PMOs should have an influence in the management and allocation of resources and should train, mentor and coach employees in the organisation through regular workshops and training programs in project management.

4.6   Discussion on influence of PMO in project governance

Both quantitative and qualitative findings indicated that the PMO had moderate influence in project governance in the organisation. The moderate influence was in relation to the elements of setting project standards and ensuring compliance to the standards and project integration. However, the PMO was perceived to have no influence at all in quality assurance of projects in the organisation. Alie, (2015) attributes project governance as a critical component to the success of a project by way of defining a single point of accountability, outlining roles and reponsibilities, promoting information dissemination and transparent communication. The PMO should be positioned in the organisation under a project governance framework providing a clear disctinction between ownership and control of tasks which will clearly define accountability and proper compliance to project standards set (Aliza, Stephen, & Bambang, 2011). The project management governance framework according to

Bernardo (2014) should encompass roles and responsibilities, methodologies, controlling processes and adequates competencies all linked to the organanisaiton's strategy based on commitment and ethics (Bernardo, 2014). The findings contradict the literature as results demonsrated that PMO is not sufficiently equipped to perform its ideal responsibilities and does not have much influence to take full control of project governance within the organisation.

4.7 Discussion on influence of PMO in project organisation

Quantitative findings indicated that the PMO had moderate influence in project organisation. Specifically, the PMO was perceived to have moderate influence in effective flow of project information across project teams, defining of roles and responsibilities and ensuring compliance. Qualitative findings contradicted those of quantitative where the PMO was perceived to have minimal influence on project organisation. Both findings were contradictory to the PMI (2013) theory which states that the PMO should be the key stakeholder and should be influential in providing project design models, interaction and integration of project participants, management of effective flow of information across project teams, influencing structural changes to projects and defining roles and responsibilities which are all organisational attributes.

4.8 Chapter Conclusion

This chapter provided an analysis of results that were based on quantitative and qualitative data gathered through questionnaires and interview protocol in an effort to determine the PMO level of involvement and influence in the DRDLR to successfully deliver on projects. The findings were compared to literature discussed in Chapter 2 to determine the level of influence and involvement of the PMO in the successful delivery.

CHAPTER 6

CONCLUSION AND RECOMMENDATIONS

6.1 Introduction

The previous chapter discussed the findings of the study on the PMO influence and involvement in successful project delivery in the DRDLR and linked the findings to published literature. This chapter presents the conclusion of the study and recommends the scope, for further study. The scoping for further study is based on the gaps that were identified in the study findings.

6.2 Study Conclusion

The study investigated the influence and involvement of the PMO in ensuring successful project delivery in the DRDLR. The objectives of the study as outlined in the introduction chapter were addressed using a mixed research method approach. Data was collected through interviews with subject matter experts and questionnaire survey from staff involved with projects in the organisation. The study findings showed that the PMO had moderate influence and involvement in project resourcing, project governance and in project organisation. The results of the study support the views of Khalema et al., (2015) that the value of the PMO is still questioned by organisations and that formal project practices in South Africa are exhibiting low maturity levels, where the concepts of project management have not been formalised or standardised, and no concurrence about the role of project management in matrix structured organisations has been reached. Published literature alludes to resourcing, governance and project maturity as the key enablers contributing to project success and yet the findings of the study indicate that the PMO is not properly empowered with authority to be involved or influence these project success enablers. Project maturity in the public sector is still very low which is inherently hindering the line of sight to the realisation of organisational

strategy which is delivered through the PMO that plays a critical role in delivering projects in the organisation. The recommendations on the involvement and influence of PMO that have been suggested can be implemented to assist organisations in the public sector to promote successful project delivery.

6.3 Recommendations

6.3.1 Project resourcing recommendation

Project resource management involves the allocation of the right resource to the right project at the right time by Resource Managers with a deep understanding of the resources held in the organisation Khan (2017). For a PMO to be successful and effective it needs to be equipped with staff whose expertise are recognised and respected by the organisation being embedded and engaged by the organisation and advertising the PMO organisational mission Darling and Whitty (2016).

It is recommended that the organisation empowers the PMO with Resource Managers who will advise on adequate project resource deployment according to skills, competence and availability. The Resource Management team will be mandated with continuously carrying out competency skills audits in the organisation to determine the organisational capacity resulting in the recruitment of the required project resources.

6.3.2 Project governance recommendation

The absence of a governance structure subjects an organisation to a risk of conflicts and inconsistencies which may be barriers in the achievement of organisation goals.

It is recommended that the organisation has dedicated PMO resources to work closely with business units and be equally accountable on the implementation of project methodologies and frameworks to promote standardisation of project procedures across

the organisation. The PMO resource would also be responsible for the project audits to ensure compliance to the projects standards and frameworks.

It is recommended that the organisation has PMO representation in all executive level committees and governance structures in the organisation to advocate proper buy in, adoption and support of project methodologies and frameworks and to be able to accurately report on project status to aid in executive decision making.

6.3.3 Project organisation recommendation

Hill (2013) demonstrates and justifies the project maturity to the roles carried out by the PMO which define PMO maturity in the organisation. The PMO gradually increases depending on the level of maturity the organisation is on.

It is recommended that the organisation designs and pilots a well-structured PMO with well-defined lines of authority. The PMO should be visible and be supported by the executive management so that it can execute its mandate effectively and efficiently. All the other business units including employees should be made aware of the existence of the PMO together with its functions and benefits to the organisation.

6.4 Future research

The following future research studies are recommended;

a) A similar study needs to be undertaken, including more institutions in the public sector and covering more provincial locations.

b) A study needs to be undertaken to identify significant factors that affect project performance. A lot of factors in this study demonstrated insignificant effect on project delivery.

c) An analysis of internal factors that are possible hurdles towards promoting a successful project delivery in the public sector needs to be undertaken.

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Section A: Background information

		Snr Management	Middle Management	Junior Management	Operational staff	Other Please specify
1	Indicate your position within the organisation	☐	☐	☐	☐	☐
		EPMO	Engineering	Finance & Procurement	Corporate Services	Other Please specify
2	Indicate your departmental function	☐	☐	☐	☐	☐
		Postgraduate	Degree	Diploma	Certificate	Other Please specify
3	Indicate your highest qualification	☐	☐	☐	☐	☐
		Less than 1 year	1- 2 years	3-5 years	6-10 years	+10 years
4	How long have you worked for your organisation?	☐	☐	☐	☐	☐

The influence of the Project Management Office in The Department of Rural development and Land Reform".
Research Questionnaire – N Zungu

SECTION B: PMO IN PROJECT RESOURCING

*You are requested to provide an opinion on the **degree of involvement/participation as well as the degree of influence of PMO** in resourcing projects within your organisation. Your perception on the degree of participation and influence is ranked using a 5 point Likert scale that range from very low to very high. Please indicate your preferred answer with an X in the appropriate box (1 = very low, 2 = low, 3= moderate, 4 = high and 5 = very high)*

PMO in Project Resourcing	Degree of involvement					Degree of influence				
	1	2	3	4	5	1	2	3	4	5
PMO within our organisation contributes influential decisions on project financing										
PMO takes part in the allocation of training resources within our organisation										
PMO is involved in the recruitment of skills required for project management within our organisation										
PMO has authority to decide on the people to be hired to run projects in our organisation										
PMO is empowered to make decisions on deployment of staff to highly prioritised projects within the organisation										
PMO regularly participates in mentoring programs to improve the knowledge base of the function within our organisation										

SECTION C: PMO AND GOVERNANCE

*You are requested to provide an opinion on the **degree of involvement/participation as well as the degree of influence of PMO** in project governance within your organisation. Your perception on the degree of participation and influence is ranked using a 5 point Likert scale that range from very low to very high. Please indicate your preferred answer with an X in the appropriate box (1 = very low, 2 = low, 3= moderate, 4 = high and 5 = very high)*

PMO and Governance	Degree of involvement					Degree of influence				
	1	2	3	4	5	1	2	3	4	5
PMO ensures that project standards are set for the organisation										
It is the responsibility of the PMO to ensure that project standards set are complied with in the organisation										
It is the duty of the PMO within the organisation to ensure that project service quality is within stakeholder expectation										
The PMO within the organisation has a mandate to ensure that projects are well integrated										
PMO in the organisation participates in the design of project processes to ensure successful project delivery										
It is PMO's role to ensure the complete implementation of project processes to support successful project delivery										
It the responsibility of PMO within the organisation to ensure that information is shared across various project teams										

SECTION D: PMO ORGANISATION

*You are requested to provide an opinion on the **degree of involvement/participation** as well as **the degree of influence of PMO** in project organisation. Your perception on the degree of participation and influence is ranked using a 5 point Likert scale that range from very low to very high. Please indicate your preferred answer with an X in the appropriate box (1 = very low, 2 = low, 3= moderate, 4 = high and 5 = very high).*

PMO organisation	Degree of involvement					Degree of influence				
	1	2	3	4	5	1	2	3	4	5
It is the responsibility of the PMO to create an environment that promotes interaction and integration among all project participants										
PMO is consulted on structural changes relating to projects within the organisation										
PMO is duty bound to ensure effective flow of information across project teams										
PMO within the organisation has an executive representation who can influence buy in on important issues on projects										
PMO is responsible to regularly report to executive management on the performance of projects within the organisation										
PMO has an input in defining roles and responsibilities of employees within projects in the organisation										

	V.Poor	Poor	Moderate	Good	Very Good
Please rate the overall performance of PMO within your organisation					

Thank you for your time and participation

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Informed Consent Letter

UNIVERSITY OF KWAZULU-NATAL GRADUATE SCHOOL OF BUSINESS AND LEADERSHIP

MCOMM Research Project

Researcher: Ms Nokubonga Zungu (072 196 3387)

Supervisor: Dr R Sibanda (076 787 8627)

Research Office: Ms P Ximba (031-2603587)

Dear Respondent,

I am Nokubonga Zungu a Master of Commerce in Leadership Studies student at the Graduate School of Business and Leadership of the University of KwaZulu Natal. I am conducting a research study on the PMO (Project Management Office) in partial fulfilment of my MCOMM degree.

The study is entitled: **"Towards effective project delivery: The influence of the Project Management Office in the Department of Rural Development and Land Reform"**

The aim of the study is to understand the PMO's value add and the degree of control it has in influencing successful project delivery in the public sector. The results of study are intended to contribute towards to the PMO's relevance in the public sector and to recommend a strategic operating framework that can be adopted in order to promote continuous project delivery success.

You have been selected to take part in an interview in order to provide valuable information that will be used in the study. The interview will take forty five minutes with questions relating to the control and influence of the PMO in the successful delivery of projects within your organisation. Your participation in this interview is voluntary and you have the right to stop the interview or withdraw from the research at any time with no negative consequences. There will be no monetary gain from participating in the study. Your anonymity will be maintained by the researcher and the UKZN Graduate School of Business and Leadership. The personal and organisational information gathered in this questionnaire will be used for scholastic purposes only. Your personal information will only be used for communication purposes to provide you with the summary of results on request.

Ethical procedures for academic research at the UKZN Graduate School of Business and Leadership, dictate that interviewees explicitly agree to being interviewed and notified how the information contained in their interview will be used. This consent form is necessary for us to ensure that you understand the purpose of your involvement and that you agree and approve that the interview will be recorded and a transcript will be produced and analysed by the researcher, Nokubonga Zungu. Access to the transcript will only be limited to the researcher and Supervisor.

Confidentiality and anonymity of records identifying you as a participant will be maintained by the Graduate School of Business and Leadership, UKZN. If you have any questions or concerns about completing about participating in this study, you may contact me or my supervisor at the numbers listed above.

Sincerely

Investigator's signature_____ Date_____

This page is to be retained by participant

UNIVERSITY OF KWAZULU-NATAL GRADUATE SCHOOL OF BUSINESS AND LEADERSHIP

Project Researcher: Ms Nokubonga Zungu (072 196 3387)

Supervisor: Dr R Sibanda (076 787 8627)

Research Office: Ms P Ximba 031-2603587

CONSENT

I.. (Full names of participant) hereby confirm that I understand the contents of this document and the nature of the research project, and I consent to participating in a recorded interview for the research project. I understand that I am at liberty to withdraw from the project at any time, should I so desire.

I hereby consent / do not consent to have this interview recorded.

SIGNATURE OF PARTICIPANT ....DATE ....

This page is to be retained by researcher

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<u>Informed Consent Letter</u>

UNIVERSITY OF KWAZULU-NATAL GRADUATE SCHOOL OF BUSINESS AND LEADERSHIP

MCOMM Research Project

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You have been selected to take part in a survey in order to provide valuable information that will be used in the study. Your participation in this survey is voluntary and highly valued. You may refuse to participate or withdraw from the study at any time with no negative consequences. There will be no monetary gain from participating in the study. Your anonymity will be maintained by the researcher and the UKZN Graduate School of Business and Leadership. The personal and organisational information gathered from this questionnaire will be used for scholastic purposes only. Your personal information will only be used for communication purposes to provide you with the summary of results on request.

The questionnaire was designed to make it easy to complete. All questions can be answered by ticking in the appropriate box. The questionnaire contains questions relating to the control and influence of the PMO in the successful delivery of projects within your organisation. Note that the questionnaire should take you about 15 minutes to complete. Please answer all the questions provided. Both the completed questionnaire and consent form must be returned to the researcher either via email, or by hand delivery if possible.

Confidentiality and anonymity of records identifying you as a participant will be maintained by the Graduate School of Business and Leadership, UKZN. If you have any questions or concerns about completing the questionnaire or about participating in this study, you may contact me or my supervisor at the numbers listed above.

Sincerely

Investigator's signature_____ Date_____

<u>This page is to be retained by participant</u>

UNIVERSITY OF KWAZULU-NATAL GRADUATE SCHOOL OF BUSINESS AND LEADERSHIP

Project Researcher: Ms Nokubonga Zungu (072 196 3387)

Supervisor: Dr R Sibanda (076 787 8627)

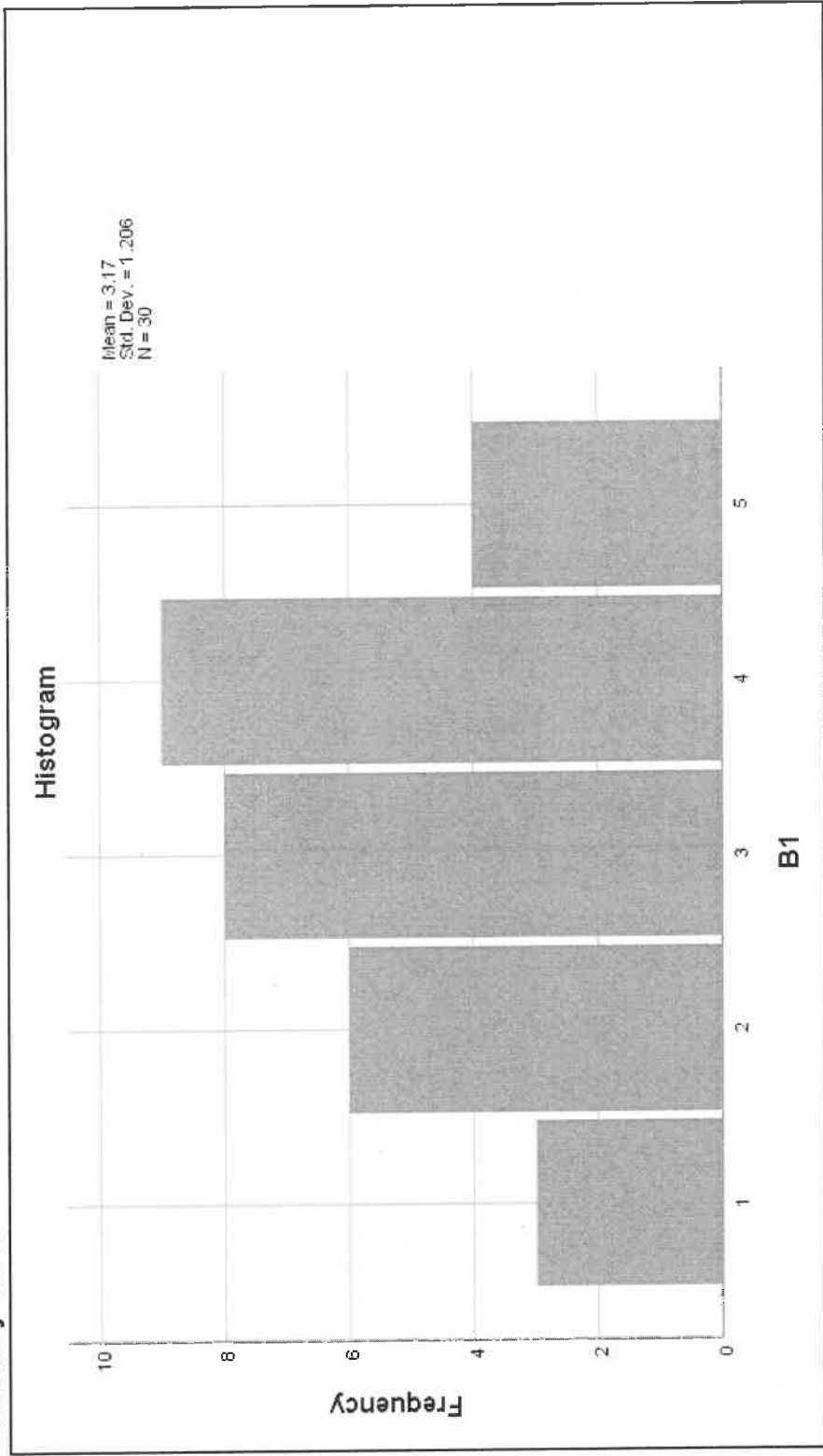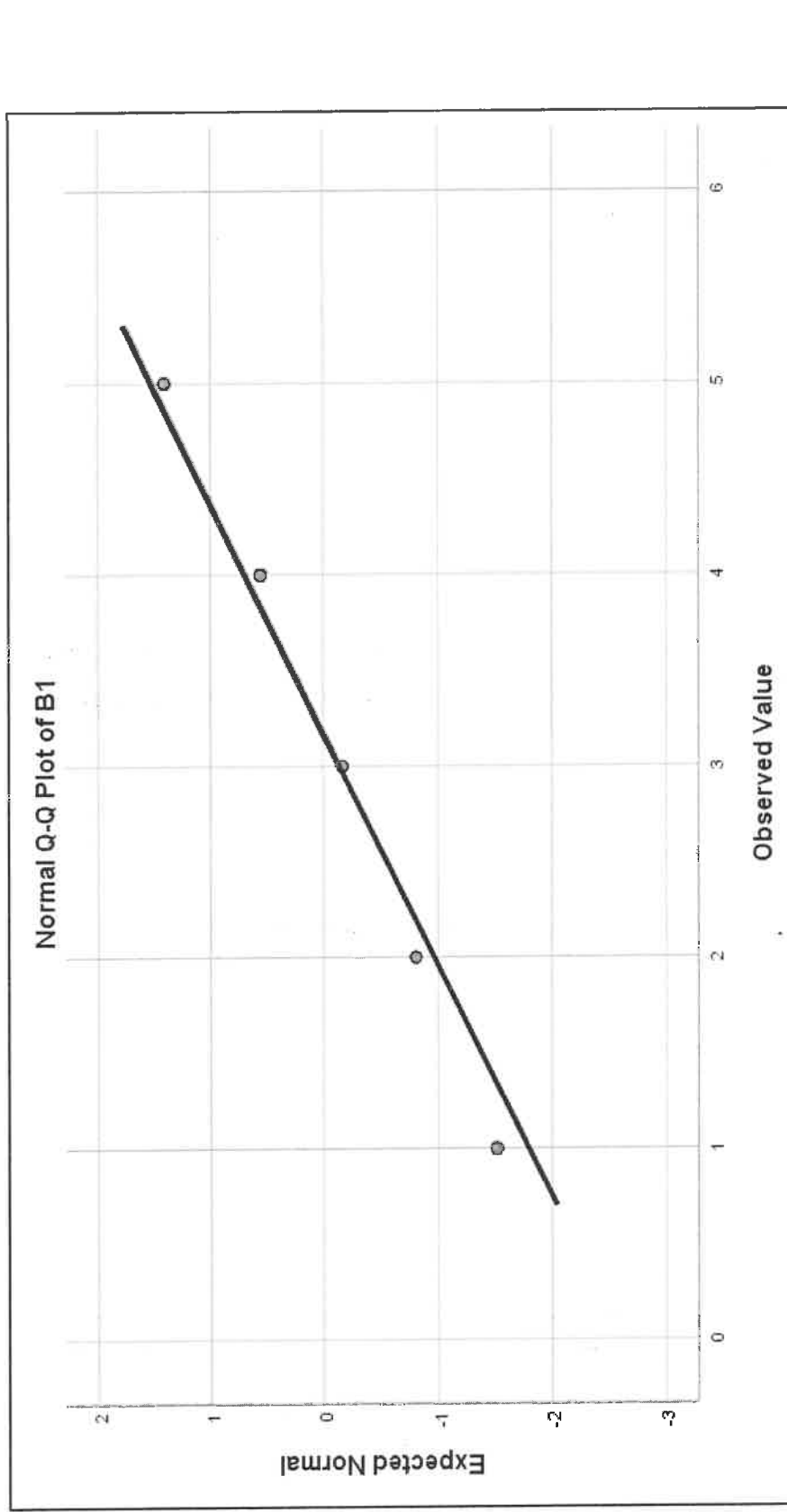**Research Office: Ms P Ximba 031-2603587**

CONSENT

I..(full names of participant) hereby confirm that I understand the contents of this document and the nature of the research project, and I consent to participating in the research project. I understand that I am at liberty to withdraw from the project at any time, should I so desire.

SIGNATURE OF PARTICIPANT...DATE ....

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Normality Tests

Annexure 4

Histogram

Mean = 3.17
Std. Dev. = 1.206
N = 30

Normal Q-Q Plot of B1

Expected Normal

Observed Value

Detrended Normal Q-Q Plot of B1

B1
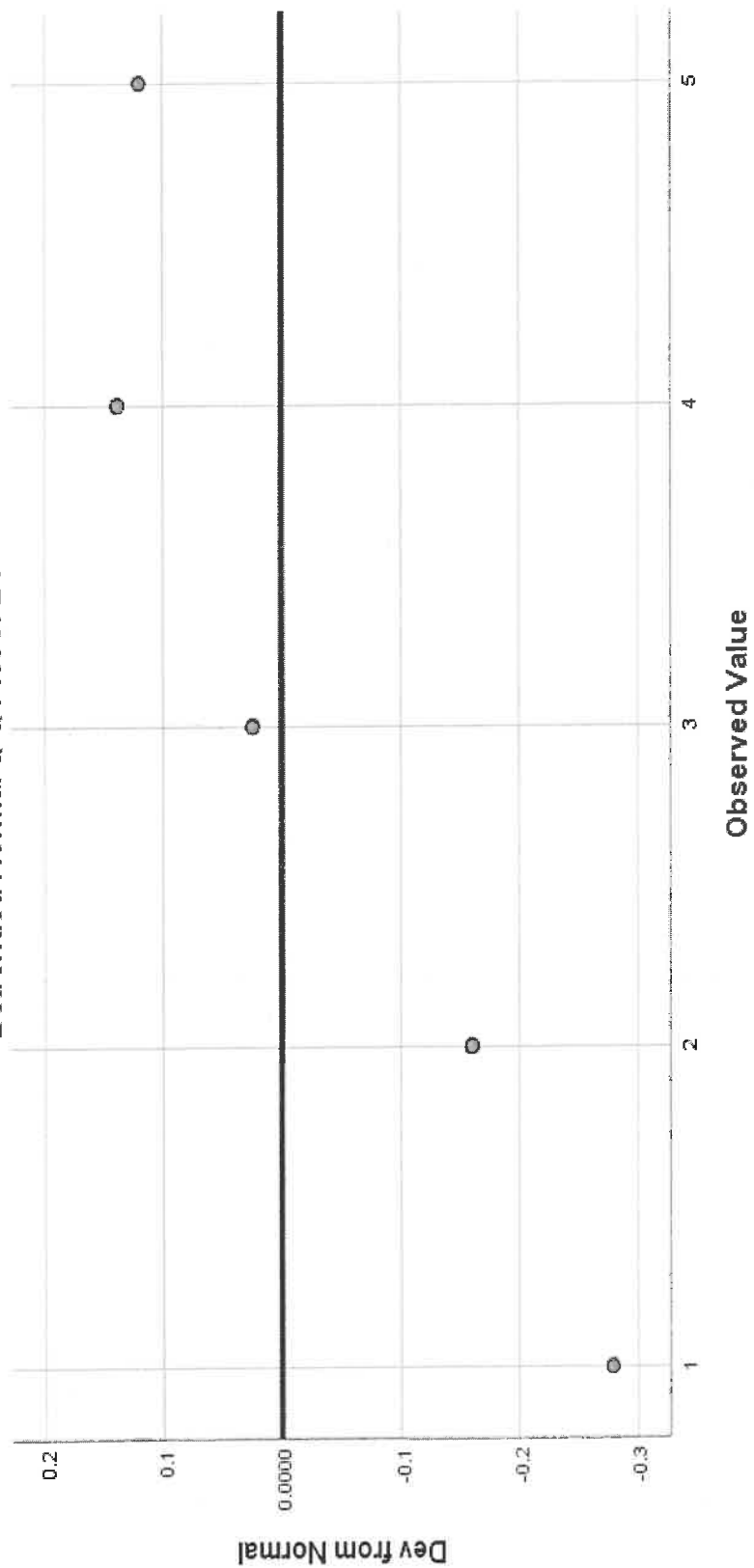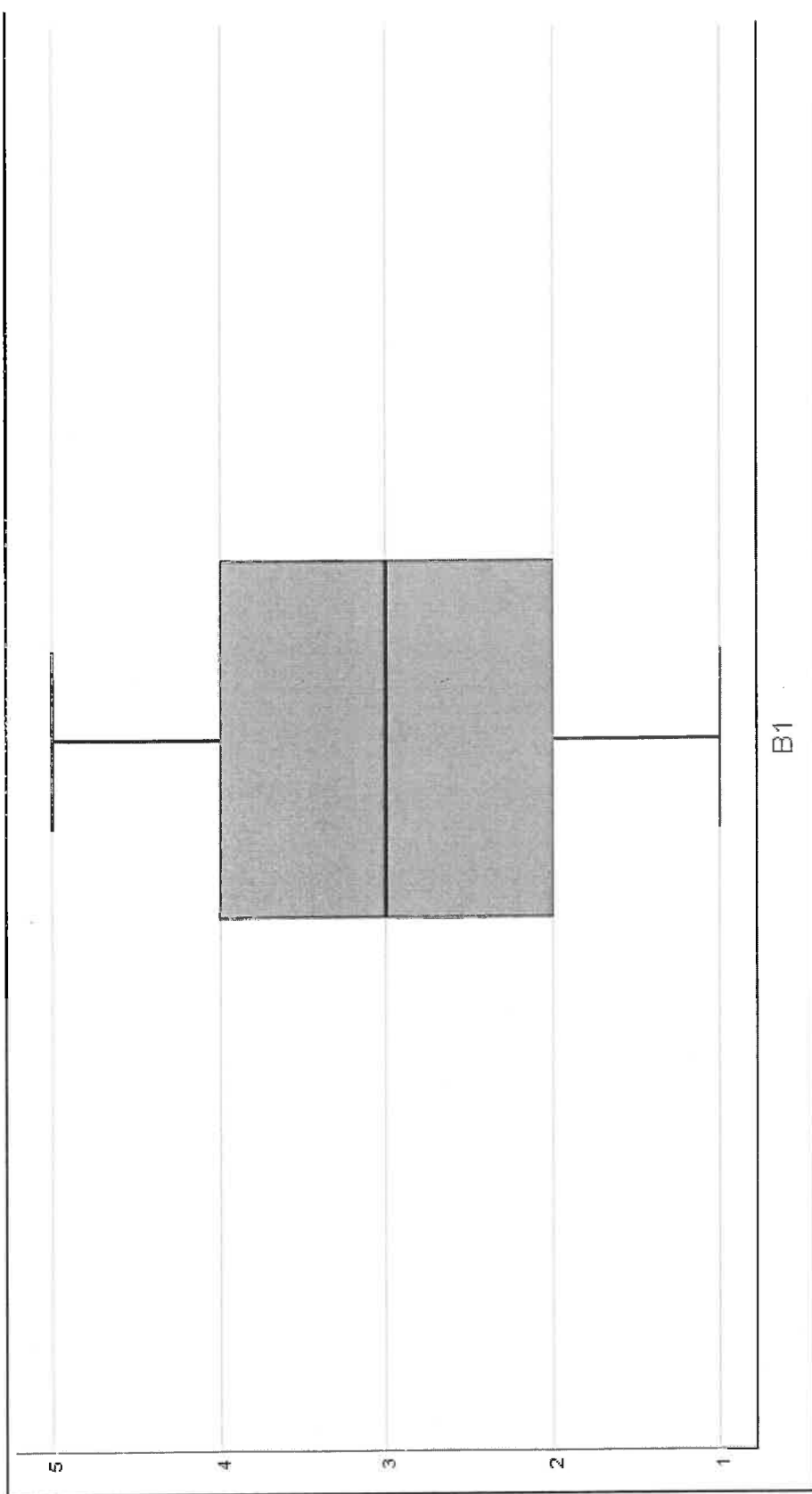
	N	Percent	N	Percent	N	Percent
B1	30	73.2%	11	26.8%	41	100.0%

Descriptives

			Statistic	Std. Error
B1	Mean		3.17	0.220
	95% Confidence Interval for Mean	Lower Bound	2.72	
		Upper Bound	3.62	
	5% Trimmed Mean		3.19	
	Median		3.00	
	Variance		1.454	
	Std. Deviation		1.206	
	Minimum		1	
	Maximum		5	
	Range		4	
	Interquartile Range		2	
	Skewness		-0.215	0.427
	Kurtosis		-0.794	0.833

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
B1	0.189	30	0.008	0.916	30	0.022

a. Lilliefors Significance Correction

Dissertation Nokubonga Zungu

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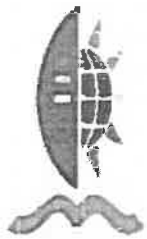**23** Submitted to University of Mindanao
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10 October 2017

Ms Nokubonga Zungu (216056743)
Graduate School of Business & Leadership
Westville Campus

Dear Ms Zungu,

Protocol reference number: HSS/1366/017M
New project title: Towards effective project delivery: The influence of the Project Management Office in the Department of Rural Development and Land Reform

Approval Notification – Amendment Application

This letter serves to notify you that your application and request for an amendment received on 11 September 2017 and 18 September 2017 has now been approved as follows:

- Change in Title
- Change in Research Methodology

Any alterations to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form; Title of the Project, Location of the Study must be reviewed and approved through an amendment /modification prior to its implementation. In case you have further queries, please quote the above reference number.

PLEASE NOTE: Research data should be securely stored in the discipline/department for a period of 5 years.

The ethical clearance certificate is only valid for period of 3 years from the date of original issue. Thereafter Recertification must be applied for on an annual basis.

Best wishes for the successful completion of your research protocol.

Yours faithfully
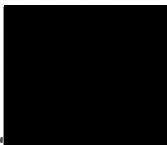
Dr Shenuka Singh (Chair)

/ms

Cc Supervisor: Dr Rosemary Sibanda
Cc Acting Academic Leader Research: Dr Muhammad Hoque
Cc School Administrator: Ms Zarina Bullyraj

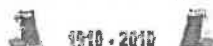Humanities & Social Sciences Research Ethics Committee
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