ST. MARY'S UNIVERSITY

SCHOOL OF GRADUATE STUDIES

PRACTICES AND CHALLENGES OF PRINCE2 METHODOLOGY IN INFORMATION TECHNOLOGY PROJECTS IMPLEMENTATION: THE CASE OF SELECTED ORGANIZATION BASED IN

ADDIS ABABA

By

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JUNE, 2019

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Table of Contents

CHAPTER ONE 1

INTRODUCTION 1

1.1 Background of the Study 1

1.2 Statement of the Problem 3

1.3 Research Objective 4

1.3.1 General Objective 4

1.3.2 Specific Objective 4

1.4 Research question 4

1.5 The significance of the study 4

1.6 The scope of the study 5

1.7 Limitation of the study 5

1.8 Organization of the study 5

CHAPTER TWO 6

LITERATURE REVIEW 6

2.1 Introduction 6

2.2 Theoretical literature review 6

2.2.1 Project 6

2.2.2 Project management 7

2.2.3 Project Success 8

2.2.3.1 Success Criteria in Project 9

2.2.3.2 Critical Success Factors in Project 9

2.2.4 Project management methodology 10

2.2.5 PRINCE2 12

2.2.5.1 The seven processes of PRINCE2 13

2.2.5.2 The seven themes PRINCE2 16

2.2.5.3 The seven principles of PRINCE2 17

2.2.6 Comparison of PRINCE2 and PMBOK 18

2.2.7 Factors that can affect PRINCE2 Implementation 19

2.2.7.1 Project team competencies 19

2.2.7.2 Risk Management 20

2.2.7.3 Organization Structure 20
2.2.7.4 Communication 20
2.2.7.5 Adaptability of the methodology 21
2.3 Empirical Literature reviews 22
2.4 Conceptual Framework 22
CHAPTER THREE 25
RESEARCH METHODOLOGY 25
3.1 Introduction 25
3.2 Research Method 25
3.3 Research Design 25
3.4 Sample Size and Sampling Techniques 26
3.5 Source of Data and Instrument of Data Collection 26
3.6 Data Analysis 26
3.7 Ethical consideration 27
CHAPTER FOUR 28
RESULTS AND DISCUSSION 28
4.1 Introduction 28
4.2 Characteristics of Respondents' 28
4.3 PRINCE2 Implementation 30
4.3.1 Starting up project 30
4.3.2 Initiating a Project 31
4.3.3 Controlling a Stage 33
4.3.4 Managing Stage Boundaries 35
4.3.5 Closing a Project 36
4.4 PRINCE2 Principles 37
4.5 Challenges of PRINCE2 38
4.6 Factors that can affect PRINCE2 41
4.7 Relative Importance Index 42
4.8 Interview Results 43
CHAPTER FIVE 46
SUMMARY, CONCLUSION & RECOMMENDATION 46
5.1 Summary 46
5.2 Conclusion 47

5.3 Recommendation 48
5.4 Suggestion for future research 48
REFERENCES 49
APPENDIX 53

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ACRONYMS

CCTA	Central Computer and Telecommunications Agency
FBC	Fana Broadcasting Corporate
FDRE	Federal Democratic Republic of Ethiopia
INSA	Information Network Security Agency
OGC	Office of Government Commerce
PMBOK	Project Management Body of Knowledge
PMM	Project Management Methodology
PRINCE2	Project In controlled Environment
RII	Relative Importance Index
UK (BoK)	United Kingdom Body of Knowledge

List of Tables

Table 4. 1 Characteristics of the Respondents.....29
Table 4. 2 Implementation of starting up a Project processes in the Agency. 30
Table 4. 3 Implementation of initiating process in the Agency.....33
Table 4. 4 Implementation of controlling process in the Agency.....35
Table 4. 5 Implementation of managing stage boundaries process in the Agency.....36
Table 4. 6 Implementation of closing process in the Agency. 37
Table 4. 7 Implementation of PRINCE2 principles in the Agency. 38
Table 4. 8 challenges that are faced by the project team.....40
Table 4. 9 Factors performance in PRINCE2 implementation.....41
Table 4. 10 RII result of factors that affect PRINCE2.....43

List of figures

Figure 2. 1 PRINCE2 Project Management Methodology Process Model.....15
Figure 2. 2 Conceptual Framework of the Study. Adapted from (Nkeletso, 2015).....24

ABSTRACT

Different literatures are written on the project performance and significance numbers projects particularly in the Information Technology sector failed to meet the predefined specification, cost and schedule. There are different factors that affect project performance. Project management methodology is one of the factors. Intensive literature is done on PRINCE2 methodology implementation however there is a gap in research conducted in this topic in Ethiopia. This research aimed to minimize the gap created by the contextual gap of paper written in the area. The main purpose of the study is to assess the practices and challenges of PRINCE2 implementation on IT projects in the case Information Network Security Agency. To conduct the study successfully, the researcher adopted a descriptive research design to profoundly understand the PRINCE2 implementation in the agency. In addition to this, a quantitative research approach was adopted to explain the implementation in terms of numbers with the intention of identifying the level of the implementation. The study was conducted in closed and ongoing projects and the questionnaire was prepared and distributed for 40 respondents who had participated in the Agency projects. To analyze the information collected from the participants, SPSS version 24 was used for computing the frequency and mean and. In addition to this, the Relative Importance Index (IRR) tool was used to evaluate the waited impacts of factors in the PRINCE2 implementation. The finding shows that the implementation level of PRINCE2 in the Agency is around 45 percent which is very low. Related to the practice, there are challenges faced by the project team while the project implementation. Lack of necessary resource, training, organizational structure and lesson learning from previous projects are the most selected. In addition to this, the RII result shows that organizational structure, communication management and tailoring have high impact on the practice compared to the others. Based on this the researcher recommends that the agency should use the new PRICEN2 Agile framework which is more applicable to IT projects.

Key words: PRINCE2, Project management methodology, Project success factors.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

In this dynamic and fast-changing business world, the organization needs to create competitive strategies and perform according to the expectation of their customers in order to get the marketing advantage over their competitors. To implement those strategies projects plays a great role in changing the objective of the organization into reality. However, projects need to be properly managed to create the intended result since they are time, budget and scope bounded. In contrast, most of the projects especially in the information technology industries failed to meet the original plan. According to Standish Group (1995), only 14.6 percent of Software projects meets the United States original targets, and 50 percent of them experience changes in targets. In other words, around 83 percent of them failed to meet the proposed goal.

There are different works of literature written on the factors that can affect the failure of the project. Standish Group Report (2010) put the selection and use of a project methodology as one of the top ten contributing factors to project failure. The report further discusses that project methodologies have provided an improvement to project success (35%), in contrast to the rate of failure (19%). Project management methodology (PMM), which is meant to enhance project effectiveness and increase the chance of success (Vaskimo, 2011). Project management methodologies are helpful in easing the difficulties in planning, implementing, monitoring and closing of project management process: they can also cause a problem to the project if they are not tailored to the project environment and scale of the project.

There are different project management methodologies such as PMBOK, PRINCE2, Agile and six sigma are some of most common, which are applicable to the projects management process. PRINCE2, Projects in Controlled Environments, was created in 1989 by CCTA (the Central Computer and Telecommunications Agency) since then called by OGC (the Office of Government Commerce). It is a method of project management designed based on experience gained in thousands of projects and contributions of numerous sponsors, managers, project teams, academics, trainers and consultants (Saima, Abdullah, Omme, Muhmmad and Junaid 2003).

After different researches and experience gained from projects which succeeded and failed, PRINCE2 tries to approach a generic approach to become flexible to the point of modeling all types of design, i.e., it becomes a practical reference, possible to apply to any type of project, scale, organization, geography or culture. So it has become widely recognized as one of the methods of project management more accepted (Luqman, 2006).

A PRINCE 2 project is driven by the project's business case (Alvin, 2003). He describes the organization's justification, commitment, and rationale for the deliverables or outcome. The business case is regularly reviewed during the project to ensure the business objectives, which often change during the lifecycle of the project, are still being met. PRINCE 2 is designed to provide a common language across all the interested parties involved in a project. The method provides the necessary controls and breakpoints to work successfully within a contractual framework. The advantage, disadvantage, and comparison between other PMM will be briefly described in the literature review part.

PRINCE2 PMM has its own benefits and issues according to Rupali & Kirti (2017). PRINCE2 is a constant, reliable and organized approach, which makes it easy to manage projects from the beginning to the end stage. In this project management method, the project is divided into stages making the project very easy to manage. Due to this, the project management team will be motivated and focused on delivering the result. The other strength mentioned by the paper was the way it boosts the communication between the stakeholders Pavel (2019) also agree with this idea. Pavel (2019) also mentioned that PRINCE2 give the opportunity for the stakeholders to participate in the decision-making process, which will increase the success of the project.

Rupali & Kirti (2017) also tried to point out some issues related to PRINCE2 PMM. The first issues mentioned in the study was the amount of time needed to prepare the necessary documents due to the methodology highly focused on comprehensive planning and heavy documentation. The second issue mentioned was, the PRINCE2 method does not deal directly with the interpersonal aspects of project management, any good PRINCE2 project manager would understand the need for motivation within the project environment.

1.2 Statement of the Problem

When we come to the Information Network Security Agency, there have been 281 different Information Technology projects implemented by the Agency. According to Fana Broadcasting Corporate (FBC) news on Jan 31, 2019, the report presented by the Agency to FDRE House of People Representative, 32% of the Agency projects are failed to deliver the expected outcome. This was the reason that made the Agency decide to incorporate PRINCE2 PMMs as the framework to facilitate the project management process and to increase the success rate of projects. It has been almost six years since the Agency started implementing the framework in most of the projects. However, the implementation of PRINCE2 does not bring the result that the Agency strives to get. The practice also faces different challenges during managing the projects. To mention some of them, lack of resources needed for the implementation, project managers experience on the PRINCE2 and top management commitment on the implementation. These problems are affecting the project management performance, as a result, the benefits that the Agency planned to get will be influenced negatively.

The researcher tried to revise the existing knowledge in the area especially papers related to project management methodology and PRINCE2 PMM. Radka (2017), have studied how the PRINCE2 PMM should be implemented in the Czech Republic enterprise service industry. In addition to this, he mentions how the best practice PRINCE2 can be integrated into the service industry sector. Not only this, Peter (2007) wrote the implementation of PRINCE2 and challenges of the health sector in England. There are other papers written on this topic in different content especially in developed nations. However, those researches may not be applicable to our project management culture due to the difference in culture or in another word; the context of the project environment of our country is different to the developed nations. Pär (2011) describe that the financial strength, education, and culture of the working environment are the contextual factors that can affect the approach and method of project management. According to Zeffane (1989), cultural is important to the business organization because it can integrate an individual into teams and likely to promote values such as dedication, loyalty, honesty and most important the cooperation and efficiency on work. Based on this, the research strives to evaluate the practical implementation of PRINCE2 methodology and find the challenges during the implementation to bring the solution from the management.

1.3 Research Objective

This part further discuss about the general objective of the study which is the sole purpose of the research. In addition, it explain the specific objectives of the study. Research question and hypothesis also included.

1.3.1 General Objective

The general objective of the study is to assess the implementation practice of Prince2 project management methodology and identify the challenges faced by the project management team in Information Network Security Agency.

1.3.2 Specific Objective

Based on the general objective we can drive the following specific objective of the study.

- To assess the practice of PRINCE2 Process in Information Network Security Agency
- To assess the practice of PRINCE2 Principles in Information Network Security Agency
- To identify the challenges faced by the Agency during the implementation of Prince2.

1.4 Research question

Based on the above discussion of the problem, the study aims to answer the following questions.

- What are the challenges and issues faced by the project team during the Prince2 implementation?
- What is the level of implementation of PRINCE2 processes in the Agency Projects?
- What is the level of implementation of PRINCE2 Principles in the Agency Projects?

1.5 The significance of the study

The result of this study will contribute to the successful implementation of PRINCE2 by the Agency by indicating the best practice. The study provide the gap in the practice for effective project management process, and providing proper solutions for the challenges, which finally benefit the Agency to realize success in managing projects. The research also intended to be the stepping stone for researchers to study further in this area.

1.6 The scope of the study

The scope of this study is limited to Information Network Security Agency Information Technology projects implemented using PRINCE2 PMM since 2005E.C.The main reasons are due the interest of the researcher to provide solution for the agency on the gap found and time constraint to conduct this research. The main aim of this study is to analyze the implementation of PRINCE2 project methodology in Information Technology projects implemented or being implemented in the agency. During this, the study will try to investigate the gap in the practice and challenges of PRINCE2 faced by project managers, technical team and the top management.

1.7 Limitation of the study

A limitation is somehow parts of every study, which are sometimes out of the researcher control. This research also has its own limitation related to the methodology used to conduct this research. The results of Descriptive research are not repeatable and typically, the study cannot be replicated.

1.8 Organization of the study

The main purpose of this part is to give the readers clear pictures of how the study is organized. Based on this, the study is structured in the following five main chapters. Based on this, the first chapter is an introductory part of the study. In this section, readers will get brief information about the study, which explains the conceptual background of the topic and the problems that going to be solved. The second chapter describe the works of literature written by different authors regarding the PRINCE2 PMM. This section give detailed information about the topic from a different author perspective. The third chapter explain information about the Research Methodology adopted for this study. Moreover, it gives some insight to the readers about the research techniques used and how they are going to be implemented. The final chapter cover the Conclusion and recommendations. This chapter conclude the key finding of the study and provide an important recommendation based on the findings.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

In this chapter, the researcher will mainly discuss the theoretical concepts of project management and project management methodologies. The chapter will discuss the literature written related to the project management methodologies. Finally, this chapter will further discuss the Prince2 methodology and practices of the processes, principles, and themes. Additionally, factors that can affect the implementation and challenges faced during the adoption of Prince2 framework will also be discussed.

2.2 Theoretical literature review

2.2.1 Project

Before starting to discuss some details about project management, it will be helpful to put some light on the concept of the project. Different kinds of literature provide several definitions about the project. Let us discuss some of the most commonly used definitions of projects. A project is a temporary endeavor undertaken to create a unique product, service, or result (*PMBOK*, 2008). One of the project quality guru Juran defines a project as a problem scheduled for a solution (as it is mentioned in Joseph, 2012). The above two definition shows that project is a work performed in a bounded environment like cost, time and scope to produce a solution for a specific problem.
Kerzner (2013) describes that a project is a collection of activities, which has a predefined purpose and needs to be performed within giving a schedule. However, those activities are associated with costs and other resources such as people and equipment. Though having the necessary resource and completing the project in the given time does not make the project successful. Therefore, the project needs to deliver the acceptable quality

Turner (1999) also tried to define a project as an "endeavor in which human, financial and material resources are organized in a novel way to undertake a unique scope of work, of given specification, within constraints of cost and time, so as to achieve beneficial change defined by quantitative and qualitative objectives." To add one more definition about a project, Declerck et al., (1983, 1997), tried to discuss the political side of projects. It has said a project is a collection of actions with

restricted time and space. In addition, it interacts with a politico-socio-economic environment, aimed at and tended towards a goal progressively redefined by the conflict between the thought (the project plan) and the reality.

People may ask what makes a project different from daily operational work of an organization and why the organization implement the project. A project is different from operational work due to the uniqueness of the product or service, in other words, it is not repetitive or routine work like producing a product (Joseph, 2012). Projects need human resources, which employees do not work together more often. In addition, organization implement projects to create a new product, to conduct research and development and to solve business problems are some of the most common reasons,

2.2.2 Project management

To complete the project in budgeted cost, time schedule and defined scope organization need to implement project management successfully. As the definition project, there are various definitions of project management. According to PMBOK (2008), project management is "application of knowledge, skills, tools, and techniques to project activities to meet the project requirements". The UK Body of Knowledge UK (BoK) which also provides a definition for project management as the planning, organization, monitoring and control the implementation of the project and aspire all involved in order to achieve the project objectives based on the agreed criteria and performance (1995). In addition, it has become a crucial tool in project implementation, not only functional in software projects, but in many other business areas (Matos and Lopes, 2013).

According to Seymour et al. (1992), project management is a central strategy in the changes that many organizations are undergoing as they adopt from a stable, machine-like model to a more dynamic one in face of environmental turbulence and change. Project managers face a difficult task of both fostering flexibility, adaptability and the acceptance of change as a permanent state, and providing support for team members to enable them to live with a process they may experience as stressful and disorientating.

Kerzner (2003) defines project management as the planning, organizing, directing, and controlling of company resources for a relatively short-term objective that has been established to complete specific goals and objectives.

Project Management is the application of knowledge, skills, tools, and techniques to project activities to meet project requirements. Project management is accomplished with processes such as initiating, planning, executing, controlling, and closing. The term project management is sometimes used to describe an organizational approach to the management of ongoing operations also referred to as management by projects. In the same, many aspects of ongoing operations are treated as projects to apply the project management practices easily to them.

According to the definition by Prakash (2008), Project management is a specialized branch of management, which has evolved in order to coordinate and control some of the complex activities of the modern industry. The changing business environment of the twenty-first century increases the range of activities coming under the periphery of project management techniques and the way projects are managed. Projects are open systems because they exist in an open environment and have to respond to the ever-changing dynamics of situations requiring it to become much more adaptive than ever.

2.2.3 Project Success

Literatures says different concepts on project success since it has a different meaning for different stakeholders. In addition to this, it is difficult to categorize project as a successful or as failed (Ika, 2009). According to Müller and Jugdev (2012), for the stakeholders, which participates in the project, it could be successful for one group of stakeholders and failure for the other stakeholder. This shows that there is subjectivity in deciding the project success due to the lack of common ground. To avoid this, there has to be a common definition or criteria to measure the success of any project. Morris and Hough (1987) define the success criteria as an independent variable in order to be used as a success measurement of the project.

Even though having a common comprehensive definition about the project success criteria's, still there are some criteria's remain subjective. To mention some of them, product usability and acceptance of the new business process according to (Robert, 2016). Though most of them argued that successful project management practice, contribute to the success of the project (Collins and Baccarini, 2004 & Munns and Bjeirmi, 1996). Therefore, there has to be methods and techniques, which aimed at quantifying the subjective measurement in order to reduce the subjectivity.

There are two major concepts that should be considered while discussing project success. The first area of the study is concerned about the project success criteria, which will be helpful in measuring project success. The second part of the study will identify critical project success factors, which contributes to the successful implementation of the project. The next part of the study will discuss the two concepts in more detail.

2.2.3.1 Success Criteria in Project

Criteria can be defined as the standard or principle by which something can be measured, judged or decided (Al-Ageeli & Alzobaee, 2016). Before we defined project success criteria, it is better to differentiate project success and project management success. According to Munns and Bjeirmi (1996) project management, success is about short-term goals like meeting the baseline on cost, time and quality: while project success is about long-term goals. Project success criteria are the standard or the benchmark, which can be used as a measurement of project success. According to Atkinson (1999), the traditional trend only focused on the iron triangle, which is cost, time and quality as the only project success criteria, but they are no longer sufficient to measure the success of the project. However, some organization still gives more focus on the iron triangle as the project success criteria's (PMBOK, 2013).

Even though project success criteria will determine the success or failure of the project, it is difficult to find common success criteria for every type of project (Westerveld, 2003). Due to this reason, there are different kinds of literature written on different success criteria's for different types of projects. Pinto and Selvin (1988) came up with six project success criteria for measuring project success. Freeman and Beale (1992) tried to review literature written on project management and able to identified seven major criteria to measure project success. This shows project success criteria is not only about the Iron Triangle rather it is more complicated and needs different success criteria for different project type or project sector.

2.2.3.2 Critical Success Factors in Project

Rockart (1779) define critical success factor as “the limited number of areas in which satisfactory results will ensure successful competitive performance for the individual, department or organization”. From this we can understand, the critical success factors can influence the successful implementation of projects (Baccarini and Collins, 2003). Alias et al. (2014) also define

critical success factors as an input to project management practice, which can increase the project success directly or indirectly.

According to Baccarini (2009) discussed that to improve the chances of a project succeeding it is crucial for the organization to have an understanding of what are the critical success factors, to systematically and quantitatively assess these critical factors, forestalling possible effects, and then choose applicable approaches of dealing with them. In addition to the definition, different scholars wrote various literature on project success factors and numbers of critical success factors, which need to be applied to enhance project success.

There are different factors that can affect project success according to Khan et al. (2013). He has developed a model which describe those factors in five dimensions based on the review he conducted on the works of literature done for the last 40 years. These success factors are Project efficiency, Organizational benefits, Project impact, Stakeholder satisfaction, and potential. Anderson et al. (2006) identified nine critical success factor after studying the relationship between project success factors and actual project success.

2.2.4 Project management methodology

The methodology can be defined as guidelines or set of the checklist used to achieve certain things according to Kerzner (2005). It will not that different for the project environment, as it's set of specific approach, templates, forms and even checklists to follow to meet defined expectation. McConell (2010) describe project management methodology as a collection of structural elements or units that create a theoretical foundation for the project management process. Other kinds of literature define Project Management Methodology (PMM), as a means to enhance project effectiveness and increase chances of success (Vaskimo, 2011). Thus, PMMs specifically developed to support project managers in achieving more predictable project success rates.

PMM encompass comprehensive tools, guidelines, and methods which are evolving through the experience and researches conducted by different scholars in the area (Flyvbjerg et al., 2003; Morris, Crawford, Hodgson, Shepherd, & Thomas, 2006). This helps project managers to create a much better environment for managing project in a structured and defined way. As a result, it will bring the result, which is an expected outcome. To give strength to this, a methodology is used by management or project management team so as to be able to plan for projects,

execute projects, monitor and control projects, and also to be able to close projects McConell (2010). Research has shown that PMMs provide more predictable project management outcomes than projects that do not use a PMM, but still suffer from high failure rates (Lehtonen & Martinsuo, 2006; Wells, 2012).

There are many kinds of literature written on the different perspective of project management methodologies. Those kinds of literature classified into different categories based on the concepts they focus on. The first concepts discuss whether these methodologies are effective in any type of project (Cooke-Davies, 2002; Fortune & White, 2006) or depend on the appropriateness of methodology to the related project (Lehtonen & Martinsuo, 2006). Other pieces of literature focus on the concept do projects needs implement standard PMM (Crawford & 13Pollack, 2007), the customized or tailored PMM to the specific project or need to use both of those methods (Milosevic & Patanakul, 2005). The last one is about using internationally accepted PMM like Prince2 (McHugh & Hogan, 2011) or house-made PMM (Fitzgerald, Russo, & Stolterman, 2002).

From the above three concepts, the study will discuss the third perspective, which focuses on whether the project needs standard or homemade PMM. These two concepts are backed different kinds of literature which briefly describe the benefits that the project team can get. Since this study will focus on the practice of PRINCE2 PMM, the researcher will discuss points regarding international PMMs. Additionally, the study points about the homemade PMMs and their implementation gap compared with the standard PMMs.

The development of project management standards, by implication, has advanced support to the notion of the "generic" project and that there are sets of generic knowledge, skills, and practices that are applicable to most projects most of the time (Crawford, 2007). This shows any type of projects can be implemented using standard practices with no regard the type, size, and any other character, which make the project unique. There are different standard PMMs currently implemented all around the world. To mention some of them, PMBOK, PRINCE2 and agile are the most known. Moreover, companies opt to use the standard PMMs, which can give them, typical set project management practices rather than the customized one (Milosevic & Patanakul b, 2004). This methodology will give them the chance to plan, direct and control the project management process with predefined way.

However, the international standard PMM implemented by different projects, there are some literature have issues on the standards. Since the project is unique by nature and those type of standardize PMM might not work effectively as it expected every project. According to Wysocki (2011), the term usually used “one size fits all” type of methodology does not work in project management. Payne and Turner (1999) reinforce this idea. Which says project managers often report better results when they can tailor procedures to the type and size of the project they are working on or the type of resource used on the project. Russo and Stolterman (2002) also noted that the most successful PMMs are those developed for the industry/organization.

2.2.5 PRINCE2

While PRINCE2 was formalized by the UK government, it was inspired by a private sector framework. Simpact Systems Ltd developed PROMPT, which contained a system development module called PROMPT II. PROMPT stood for Project Resource Organization Management and Planning Techniques. Simpact developed PROMPT in response to computer projects overrunning on time and budget (prince2.com). After this, the UK government tried to have a new project management methodology by buying PROMPT from Simpact. The Central Computer and Telecommunications Agency only fully implemented the PROMPT II module and adjusted it to create a new standard. According to the official website, their variation of PROMPT II was named ‘PRINCE’ in April 1989. Originally, it stood for ‘**PR**OMPT II **IN** the **C**CTA **E**nvironment’ and the Civil servants later changed the acronym to ‘**PR**ojects **IN C**ontrolled **E**nvironments’. Changes from PROMPT II introduced Critical Path Analysis and project managers.

PRINCE2 is one of the best PMM, which helps the project manager to deliver a product on schedule and within a given budget. To achieve this, PRINCE2 divide project into clearly defined stages with starting and ending points (Rupali & Kirti 2017). In addition, they mainly focus on delivering products rather than implementing activities. PRINCE2 is the leading project management method in the UK and it is used across the globe in both the private and public sector. It is a process-based project management methodology. PRINCE2 has been developed to establish control at the commencement, progression, and termination of projects (Rupali & Kirti 2017).

A PRINCE 2 project is driven by the project's business case Alvin (2003), which describes the organization's justification, commitment, and rationale for the deliverables or outcome. The

business case needs to be reviewed regularly during the project to ensure the business objectives, which often change during the lifecycle of the project, are achieving the target. PRINCE2 purpose is to provide a common language across all the interested parties involved in a project. The method provides the necessary controls and breakpoints to work successfully within a contractual framework. To achieve these purposes, PRICE2 design a framework, which made of three main pillars. PRINCE2 is made up of four elements, namely, seven themes, seven processes, seven principles, and tailoring to suit organizational needs (Ghosh et al., 2012).

PRICE2 is a project management methodology of seven. Moreover, each principle, process, and themes do have seven parts. The PRINCE2 method describes project management as "The planning, delegating, monitoring and control of all aspects of the project, and the motivation of those involved, to achieve the project objectives within the expected performance targets for time, cost, quality, scope, benefits, and risk." PRINCE2 clearly defines the roles and responsibilities of the project team members and focuses on the product that the project was established to deliver. It is designed to provide a framework that covers the wide number of activities, and disciplines that are required within a project. PRINCE2 is a fully tailored project management methodology that breaks projects down into stages with a clearly defined beginning, middle and end. PRINCE2 focuses strongly on the delivery of the product that is produced at the end of each project (Rupali & Kirti 2017).

2.2.5.1 The seven processes of PRINCE2

PRINCE2 is a process-based approach for project management. A process is a structured set of activities designed to accomplish a specific objective. It takes one or more defined inputs and turns them into defined outputs. There are seven processes in PRINCE2, which provide the set of activities required to direct, manage and deliver a project successfully (Nigel, Robert & Phil 2017).

1. **Starting up a Project (SU):** - The purpose of the starting up a project process is to ensure that the prerequisites for initiating a project are in place by answering the question: Do we have a viable and worthwhile project? The decision to start the project must be explicit; the activities from starting up a project happen before this decision (Nigel, Robert & Phil 2017). In addition to this, it will help to prevent poorly conceived projects from ever being initiated as it is about approving the initiation of viable projects.

2. **Initiating a Project (IP):** - Strategic direction and the project plan need to be finalized. Each project process needs to be defined such as risk controls, quality assurance, communication and configuration (Priyanka, 1987).
3. **Directing a Project (DP):** - Corporate/Programmed Management is directing the project until its end and oversees each stage of the project. They involve in exception planning and approve each stage commencement (Priyanka, 1987).
4. **Controlling a Stage (CS)**: - Every stage of the project is controlled and managed by the project manager while taking corrective actions and providing authorization on work packages. Project manager reviews work packages and escalate identified issues and risks to the board (Priyanka, 1987).
5. **Managing Product Delivery (MP)**: - Development team and managers are utterly responsible for delivering planned products in each stage while accepting a work package (Hinde, 2012).
6. **Managing Stage Boundaries (SB)**: - This process is conducted at the end of a stage, especially, creating an exception plan by the project manager. Project manager creates the stage report and next stage-forecasting plan (Hinde, 2012).
7. **Closing a Project (CP)**: - Project closure is the last stage of the project. This activity is performed by the project manager after completing project evaluation, product hand over, documentation on lessons learned and project closure notifications processes (Hinde, 2012)

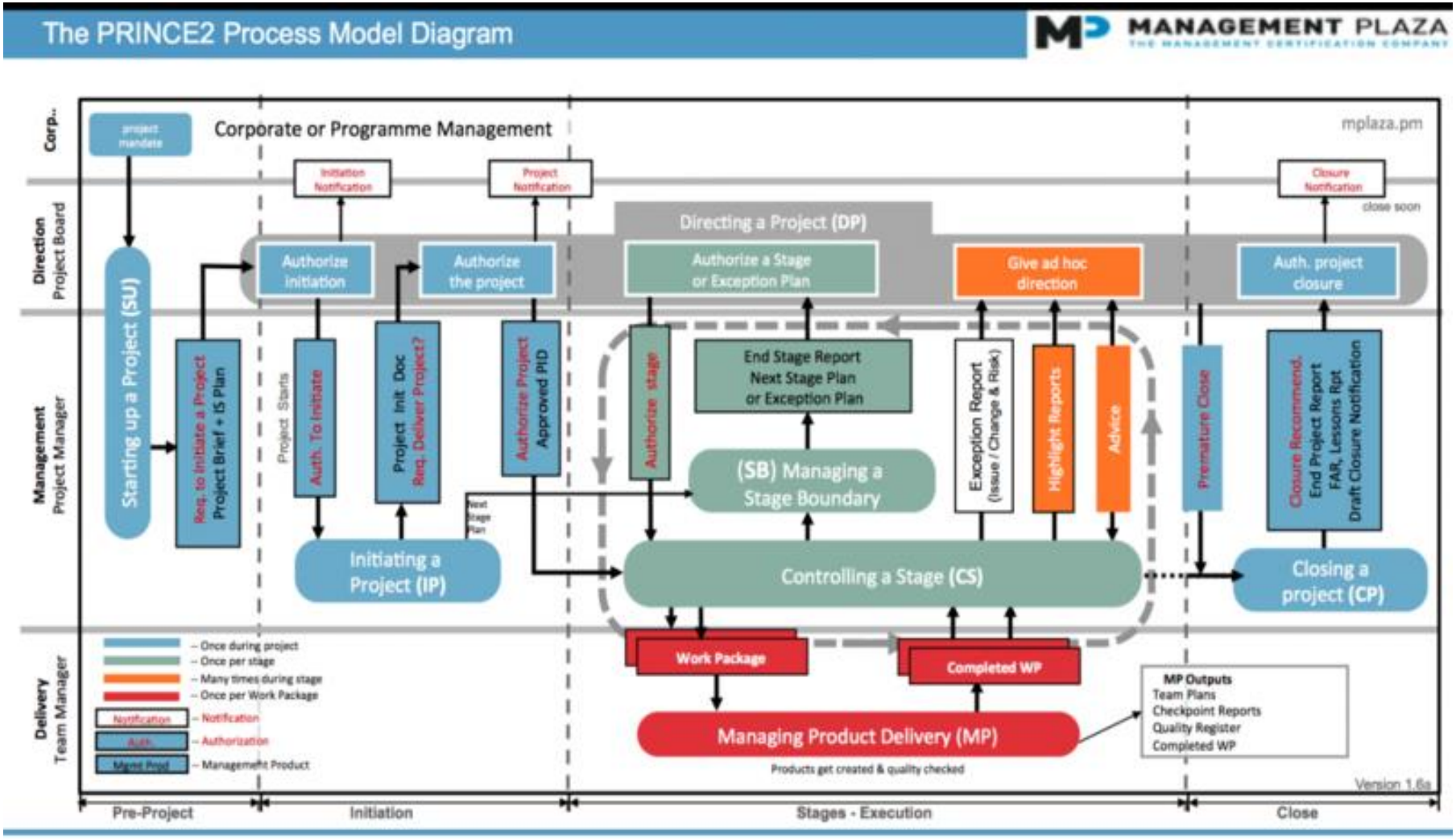

Figure 2. 1 PRINCE2 Project Management Methodology Process Model

2.2.5.2 The seven themes PRINCE2

The PRINCE2 themes describe aspects of project management that must be addressed continually as the project progresses through its lifecycle. For example, the business justification for the project will need to be updated and revalidated throughout the project lifecycle, change will take place and risks will need to be managed. However, the strength of PRINCE2 is the way in which the seven themes are integrated, and this is achieved because of the specific PRINCE2 treatment of each theme, which are carefully designed to link together effectively (Nigel, Robert & Phil 2017).

1. **Business Case**: - The project starts with an idea, which is considered to have potential value for the organization concerned. This theme addresses how the idea is developed into a viable investment proposition for the organization and how project management maintains the focus on the organization's objectives throughout the project (Nigel, Robert & Phil 2017).
2. **Organization**: - The organization commissioning the project needs to allocate the work to managers who will be responsible for it and steer it through to completion. Projects are cross-functional so the normal line function structures are not suitable. This theme describes the roles and responsibilities in the temporary PRINCE2 project management team required to manage the project effectively (Nigel, Robert & Phil 2017).
3. **Quality**: - The initial idea will only be understood as a broad outline. This theme explains how the outline is developed so that all participants understand the quality attributes of the products to be delivered and then how project management will ensure that these requirements are subsequently delivered (Nigel, Robert & Phil 2017).
4. **Plans**: - PRI NCE2 projects proceed based on a series of approved plans. This theme complements the quality theme by describing the steps required to develop plans and the PRINCE2 techniques that should be applied. In PRINCE2, the plans are matched to the needs of the personnel at the various levels of the organization. They are the focus for communication and control throughout the project (Nigel, Robert & Phil 2017).
5. **Risk**: - The risk is defined as “the possibility of incurring misfortune or loss which has an effect on the achievements of the objectives” (Hinde, 2012).

6. **Change**: - This theme describes how project management assesses and acts upon issues, which have a potential impact on any of the baseline aspects of the project (its plans and completed products). Issues may be unanticipated general problems, requests for change or instances of a product not meeting its specification (Nigel, Robert & Phil 2017).
7. **Progress**: - This theme addresses the ongoing viability of the plans. The theme explains the decision-making process for approving plans, the monitoring of actual performance and the escalation process if events do not go according to plan. Ultimately, the progress theme determines whether and how the project should proceed (Nigel, Robert & Phil 2017).

2.2.5.3 The seven principles of PRINCE2

PRINCE2 is designed so that it can be applied to any type of project, taking account of its scale, organization, geography, and culture. It is designed to contribute to the success of a project without burdening it with bureaucracy (Nigel, Robert & Phil 2017). As we discuss before these principles will give the project team the framework needed for the implementation. PRINCE2 has seven principles.

1. **Continued Business Justification**: - PRINCE2 require every project to have the following issues.
    - There is a justifiable reason for starting the project
    - The justification is recorded and approved
    - The justification should remain valid and revalidated throughout the life of the project.

    Every project need needs to have a clear return on investment and justification for resource usage. The business justification drives decision-making to ensure that the project remains aligned with the benefits being sought that contribute to the business objectives (Nigel, Robert & Phil 2017).

2. **Learn from Experience: -** The entire knowledge learned from in each stage is recorded irrespective of whether it is a success or a failed execution. Root caused is identified for both success and failure executions and documented (Barker, 2013**).**
3. **Define Roles and Responsibilities**: **-** Each phase of the project is executed by appropriate staff member/members, who are experienced in identified task/tasks within the project and who comprehends on what is needed (Hinde, 2012).

4. **Manage by Stages**: - Project management team has to identify each stage of the project, for instance, planning, designing, transitioning, and delivering. Most importantly, the project board needs to accredit each stage, and the project manager has to provide outcomes of each stage to the board (Hinde, 2012).
5. **Manage by Exception**: - Each management level within the project lifecycle has their own freedom to manage their accomplishments. For instance, team leaders manage their team without any influences from the project manager (Hinde, 2012).
6. **Focus on Products**: - Every step of the project is focused on well-defined deliverables or products. In addition, the description of each product is used as the basis for all the activities such as planning and designing (Hinde, 2012).
7. **Tailor to the Environment**: - Tailoring requires the project board and the project manager to make proactive choices and decisions on how PRINCE2 will be applied. When tailoring PRINCE2, it is important to remember that effective project management requires information (not necessarily documents) and decisions (not necessarily meetings) (Nigel, Robert & Phil 2017).

2.2.6 Comparison of PRINCE2 and PMBOK

According to Gholamreza & Mina (2016), The Project Management Body of Knowledge (PMBOK) is a group of processes and knowledge fields that are generally accepted as best practice within the project management discipline. The PMBOK Guide is also an internationally recognized standard, which provides the fundamentals of project management as they apply to a wide range of projects. The PMBOK is a detailed framework of nine knowledge areas, broken down into activities across five stages or process groups of the project life cycle that is claimed to encompass the sum of knowledge generally recognized as good practice in the project management profession (PMBOK Guide, 2008).

There some advantage and disadvantages of using PMBOK or PRINCE2 PMM in IT projects. PMBOK is somehow a general knowledge, which provides the necessary knowledge area for managing projects. However, it does not provide information on how to used tools and techniques while managing the projects (Sandra & Eurico, 2013). Where else PRINCE2 details how the techniques of project management should be structured and implemented. Additionally, it

describes how the process should be followed in order to create the expected result (Wideman, 2002).

The other difference spotted by Sandra & Eurico (2013), was the perspective used by the two PMM to define Project. PRINCE2 define a project, a project is a management environment created for delivering one or more business products according to a specified business case. While PMBOK defines a project as a temporary endeavor undertaken to create a product, service or result. The other point of difference is the role of project manager in the PMM. In the PMBOK project manager is the person responsible for meeting the goals however in PRINCE2, the project manager is only responsible for the project board and does not have the privilege to manage the project (Sandra & Eurico, 2013).

According to Sandra & Eurico (2013), one of the gaps identified about PRINCE2 is the exclusion of soft skills or people management skills such as leadership skills, motivation, and delegation. In addition to this, it does not recommend which tools to use during implementation. To mention some of them, Generic planning techniques such as Gantt charts & critical path analysis; Risk management techniques; the creation & management of corporate quality management and quality assurance mechanisms and business case management, budgetary control & earned value analysis (Williams, 2008). On the other hand, those knowledge areas are included in the PMBOK.

2.2.7 Factors that can affect PRINCE2 Implementation

There are various factors, which can affect the successful implementation of Prince2 PMM in the organization. The study will consider project managers training, organizational structure and adaptability of the methodology as factors that can influence the implementation in our agency. Based on the study will briefly discuss those factors.

2.2.7.1 Project team competencies

Project managers should have different competencies in order to make project completed as per their initial expectation. We can find different literatures which are written on the impact of project managers' competencies and their impact on project success. Araujo and Pedron (2015), discussed on their paper about the impact of project managers competencies on the project success. In

addition to this, they have identified team management, business domain knowledge, communication, project management and people skills are the most relevant competencies for the project managers. Sunindijo (2015), also briefly explained that, some competencies are have positive effect on project performance.

2.2.7.2 Risk Management

The purpose risk management is to increase the probability and impact of positive events, and decrease the likelihood and impact of negative events in the project (PMI, 2013). PRINCE2 provides processes for managing risks to increase the success of the implementation and the project success. Elkington and Smallman (2002), discussed that, the risk management process is performed in adequate way, and it will higher the project success.

2.2.7.3 Organization Structure

The structure of the organization should support the changes that should be brought up by implementing the project management methodology (Greenhalgh et al., 2004). The culture of learning and leadership should be proactive enough to encourage sharing of the project management knowledge between knowledge holders and adopters. With the above in the organization, employees are mostly more likely to adopt the project management methodology (Greenhalgh et al., 2004). When implementing the project management methodology, the environment in which the project will be implemented should allow conducive experimentation and risk-taking (Greenhalgh et al., 2004). There should be a clear strategic vision within the organization that would enable a culture of taking risks and embrace any form of change. The organization should be ready for any form of change that has to take place (Greenhalgh et al., 2004).

2.2.7.4 Communication

The value that an organization is going to gain by adopting the project management methodology should be thoroughly communicated to each employee of the organization before implementation. There should also be buy-in from top management so that they can push forward the implementation process and thus the adoption of the methodology (Greenhalgh et al., 2004). The project managers should go through advanced training on how to use the project management

methodology and what the elements it comprehend. Once the project managers feel there are others who have to make use of the methodology, and then they are likely to consult, help one another and thus finally adopt the project management methodology.

Workshops and other mass media communications are very good when creating awareness about the project management methodology (Greenhalgh et al., 2004), but when it comes to influencing the adoption of the methodology, interpersonal channels of communication are most influential in ensuring that employees do adopt the methodology (Greenhalgh et al., 2004). Engaging in social networks to introduce the methodology further by an organization increases the chances of its employees adopting that methodology.

2.2.7.5 Adaptability of the methodology

To adapt generally means to make something suitable for a new use, purpose or situation. Therefore, organizations adapt to change and project managers are often required to adapt to new environments, technologies, expectations, and situations. Above all adaptation provides a smartapproach to problem-solving by emphasizing learning through interaction, responsiveness, adjustments, feedback, and recognition of complexity and ambiguity inherent in situations. (Dalcher, 2013). PRINCE2 has often been seen as bureaucratic or only applicable to large-scale projects. While much effort was made in 2009 to revise PRINCE2 to include aspects of tailoring to the appropriate15 environment and scale of the project, it does not provide detailed guidance in one place as a valuable resource for the project manager operating in a PRINCE2 environment running a small project (Ferguson, 2011).

According to the research done by Queensland University of Technology, despite the expanded guidance on tailoring (the equivalent term used in this study to refer to adaptability) in the revised PRINCE2 2009 release, tailoring was still seen as a significant topic as the issues identified by the respondents that participated in the PRINCE2 research (Queensland University of Technology, 2010). The study included both PRINCE2 and non-PRINCE2 users. According to the PRINCE2 respondents that were involved in the study, some organizations were still adopting a one-size-fits-all (Shenhar, 2001) in their approach to PRINCE2. Interestingly, one of the chief concerns from the study was the problems caused by inexperienced project managers tailoring (adapting)

PRINCE2. This, coupled with the difficulties involved in tailoring, underscored the need for comprehensive and easy to follow guidance.

2.3 Empirical Literature reviews

Different empirical kinds of literature have been conducted on the factors that can affect the project management methodology. Nkeletso (2015), conducted a study on factors that influence the adoption of project management methodology. Based on this, he found that communication between the stakeholders; project management experience and capability to tailoring the selected project management methodology are the identified factors that can influence the implementation or adoption of the PMM.

After reviewing the conceptual literature related to the PRINCE2, the study will give some insight into the empirical study of PRINCE2 implementation and challenges faced by the Agency. Radka (2017), has conducted an empirical study on this concept and found that project which implements PRINCE2 PMM has higher rate probability of success. Additional to this, the study stated that using the methodology, the risk analysis, the quality assessment, and the timetable plan were designed, eliminating potential discrepancies in the successful completion of the project.

The study also found that PRINCE2 Project Management Methodology uses techniques and procedures to help planning by stages, define roles in the organization, control quality, and risk management. A valuable Business Case emphasizes efficient resource management. Risk management, project plan, and other written documents ensure effective management. The results of the created project are favorable Radka (2017). This further explained that PRINCE2 provide the environment and necessary inputs and process, which increase the success probability of the project.

2.4 Conceptual Framework

A conceptual framework is a structure, which the researcher believes can best explain the natural progression of the phenomenon to be studied (Camp, 2001). It is linked with the concepts, empirical research and important theories used in promoting and systemizing the knowledge espoused by the researcher (Peshkin, 1993). It is the researcher's explanation of how the research problem would be explored. The conceptual framework presents an integrated way of looking at a

problem under study (Liehr & Smith, 1999). In a statistical perspective, the conceptual framework describes the relationship between the main concepts of a study.

The conceptual framework offers many benefits to research. For instance, it assists the researcher in identifying and constructing his/her worldview on the phenomenon to be investigated (Grant & Osanloo, 2014). Ravich and Carl (2016) describe that conceptual frameworks are generative frameworks that reflect the thinking of the entire research process. Mostly, diagrams are created to define the constructs or variables of the research topic and their relationships are shown by the use of arrows. Latham (2017) argues that the entire methodology must agree with the variables, as well as their relationships and context.

To construct the conceptual framework for this study, the researcher tried to identify the variable from the empirical kinds of literature written on this topic. Based on this, the researcher selected PRINCE2 Processes, principles and themes will be the variables to measure the PRINCE2 implementation in the Agency. Therefore, to conduct this study, the researcher adopted the researcher conducted by Nkeletso (2015).

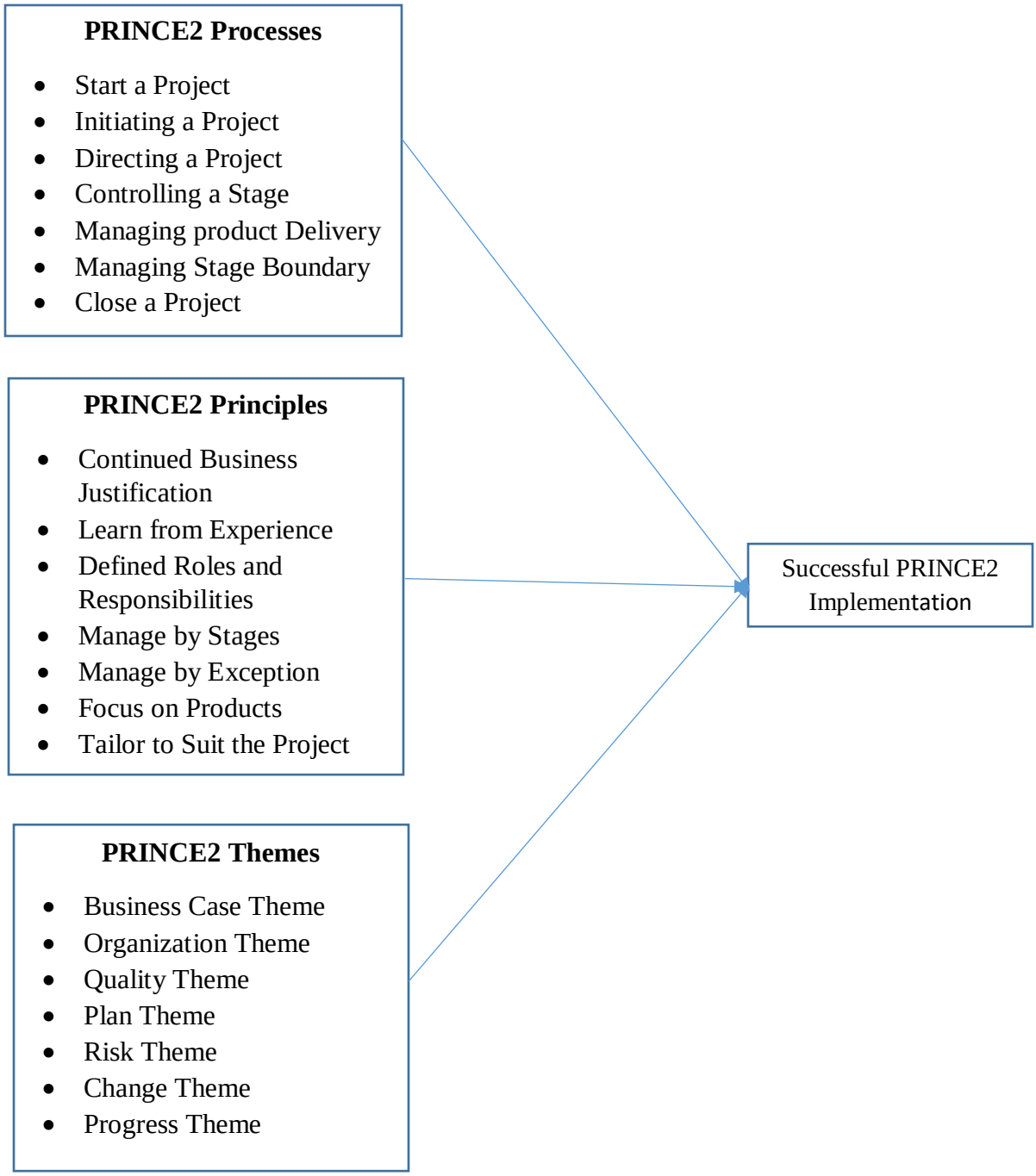

Figure 2. 2 Conceptual Framework of the Study. Adapted from (Nkeletso, 2015)

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The purpose of this study as it is explained in chapter one is to assess the implementation of Prince2 PMMs in Information Network Security Agency. This section will include research method, approach and design for showing how the study. In addition to this, sampling and data analysis is also included.

3.2 Research Method

Quantitative and qualitative research method was deployed to conduct the research. Quantitative methods emphasize objective measurements and the statistical, mathematical, or numerical analysis of data collected through polls, questionnaires, and surveys, or by manipulating pre-existing statistical data using computational techniques. Quantitative research focuses on gathering numerical data and generalizing it across groups of people or explain a particular phenomenon. The qualitative research method is used to analyze the phenomena in deep manner. Qualitative method provide better understanding on the practices and challenges faced by the Agency.

3.3 Research Design

According to Creswell (2009), research design is a framework or master plan which provide the methods and procedures necessary for collecting and analyzing the required information. Selecting the right research design needs to consider different criteria's such as flexible, appropriate, efficient, and economical and so on. Thus, a design should minimizes bias and maximizes the reliability of the data collected and analyzed is considered a good design.

Descriptive research study is concerned with describing the characteristics of an individual, or a group. It describes data and characteristics about the population or phenomenon being studied and answers the questions who, what, where, when, "why" and how. Hence, descriptive research design was adopted in this study to obtain information concerning the status of the phenomena to describe "what exists" with respect to variables or conditions associated with challenges in project implementation. According to (zakmaund, 2010) descriptive research method describes ―what exist‖ in

a given situation .so that the researcher believes that this method will describe the existing practices of PRINCE2 and challenges faced by the project team.

3.4 Sample Size and Sampling Techniques

According to Kothari (2004), a sample is part of the target population that has been procedurally selected to represent the study. There are different methods which can be used to select the right sample size to make the same more representative. Based on this the population of the study included the project management team, the technical teams, middle-level management of the Agency which participated in the projects implemented or being implemented. The total population of this study is the employees of the Agency which is around 2600. However, the target population are professional employees who works as project management team, the technical teams, middle-level management in the Agency. The study has adopted Census method because of the target population has been part of the research. The total number of the population 40 which compose 20 project managers, 10 technical managers and 10 high and middle-level managers.

3.5 Source of Data and Instrument of Data Collection

The necessary data to conduct the research will be gathered from both primary and secondary data sources. Primary data has been collected using a structured interview and written questionnaire survey. The questionnaire contain both open and closed-ended question to describe the Prince2 implementation and to identify challenges faced by the project team. An interview has been conducted to understand deeply the situations in the implementation process. Secondary data has been collected from an organizational report, relevant documents, periodic publication and other resources related to the research.

3.6 Data Analysis

Data analysis is the application of reasoning to understand the data that have been gathered. In its simplest form, an analysis may involve determining consistent patterns and summarizing the relevant details revealed in the investigation. The appropriate analytical technique for data analysis can be determined by management's information requirements, the characteristics of the research design, and the nature of the data gathered. (Zakmund and Carr, 2015).

The data analysis of the study is presented using frequencies and percentages as well as the mean and standard deviation for all variables including working experience; years on current job/position and educational level were analyzed. The data gathered through questionnaires from the respondent has been analyzed and presented in the form of tables. The collected data from selected employees is analyzed using SPSS version 24.

3.7 Ethical consideration

It is important to earn the trust of the interview questionnaire participants for eliciting good data. Thus, the purpose of the interview was explained to respondents; and they were assured that whatever they say will be kept in confidence before giving the questionnaire and beginning the interview. Privacy of participants was protected by not disclosing any harmful information that may turn out during the process.

The anonymity of individuals, roles and incidents in project was protected through use of pseudonyms and the researcher dissociated names from responses during coding and recording process. An accurate account of the interpreted data was made through debriefing between the researcher and participants. Finally, the details of the research together with the study design will be released so that readers can see for themselves the credibility of the study (Neuman, 2014).

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Introduction

This chapter has discussed the main results collected through the questionnaires distributed to the participants of the study. The finding part presented the data as it is. Based on the findings of the study, detail discussion has been made in order to give the data collected meaning according to the literatures collected on the study area. Before the questionnaire are distributed to the respondents, reliability test has been conducted. Reliability, testing the extent to which the measure was without bias was done using the Cronbach's Alpha coefficient, which ranges in value from 0 to 1. The higher the score, the more reliable the generated scale was. Accordingly, the researcher did Cronbach's Alpha test to check reliability, of the questionnaire. The alpha coefficient for the items was 0. 974 it is generally considered acceptable, suggesting that the items have relatively high internal consistency. To conduct this study, the researcher distributed 40 questionnaire to the target population and all of the questionnaire are collected.

Reliability Statistics

Cronbach's Alpha	N of Items
.974	60

4.2 Characteristics of Respondents'

This section will present the basic characteristics of the respondent which participant on this study. Table below summarize the background information of the respondent and detail discussion is followed after the table.

Table 4. 1 Characteristics of the Respondents

S/No.	Characteristics of the respondent	Response Category	Sequence	Percent
1	Educational background of respondents	Graduate (MSC)	15	38 %
		Diploma	0	0 %
		Undergraduate (BSC)	25	62 %
		High school complete	0	0 %
2	Position of the Participants	Project Manager	20	50 %
		Technical Team Leader	10	25 %
		Middle level Manager	10	25 %
3	Gender of the participants	Male	40	100 %
		Female	0	0 %
4	Job Experience	2	8	20 %
		3	8	20 %
		4	15	38 %
		5	4	10 %
		7	4	10 %
		10	1	2 %
5	Implementation of PMM in the Agency	Yes	40	100 %
		No	0	0 %

In this section, the findings of the study is discussed in a way that can answer the research question raised in the first chapter. Demographic information of the participants in the first part to be discussed in this section. According to data collected, the educational background of the participant is undergraduates and graduates.

The gender ratio of the participants shows that the project members who participate in the selected four projects are males. Form the three job position selected for this study, the female team members have almost none when they are compared with the proportion of their male counterparts. The last demographic information collected for this study is, the experience they have in the project management. Since the study incorporates three job position, the project managers' job experience has mean value of 4.3 years.

4.3 PRINCE2 Implementation

4.3.1 Starting up project

This process is one of the seven processes of PRINCE2 Project management methodology. To analyze the implementation level of the methodology, the researcher assessed sub processes in the starting up main process and results are presented in the table below.

Table 4. 2 Implementation of starting up a Project processes in the Agency.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Lesson is captured from the previous projects.	0%	16%	52%	16%	16%
Business case outline is prepared.	0%	16%	0%	68%	16%
Project Product Description (PPD) prepared.	0%	16%	0%	52%	32%
The project approach is selected.	0%	16%	0%	52%	32%
Project Brief Document is prepared during this stage.	0%	0%	4%	64%	32%
The Project Initiation plan is prepared properly.	0%	0%	17%	66%	17%

To evaluate the implementation, a questionnaire prepared to include the main process of PRINCE2. Starting up project is the first process of the methodology and contain six sub process. According to the data collected, the implementation level of sub process one which is Lesson is captured from the previous projects is very low. Most of the participant which is 52% said they are neutral with the implementation. This shows there is a gap in taking a lesson from previous projects. This could influence the implementation of future projects. The result found from the interview also show the same problem.

The preparation of a business case outline is the second sub process has a better implementation which is 84% of participants believed business outlined is prepared for the projects. This shows

the business cases are prepared before the project implementation which gives a clear understanding of the business and plays its role in the successfulness of the projects. The next sub process implemented in projects is the preparation Project Product Description (PPD). The implementation level of this sub process is around 84% which indicated in each project, the product description is prepared and can be the basic criteria for the project deliverables. The selection project approach is the next sub process the researcher collected data on. Based on the data, most of the participants agreed the project approach is selected for the project. According to PRINCE2, the project approach will guide how the project should be implemented.

The preparation Project Brief Document plays a great role in making every stakeholder on the same page about the projects. The researcher assesses the implementation level of project brief preparation in each selected project. Based on the findings, the preparation of the project brief is very high and indicates that common understanding has been created for each project before the execution. The Project Initiation plan is the final sub process of starting up process and provides the plan for initiation of the project. After assessing the preparation project initiation plan, the findings shows there is a strong implementation of the sub process.

The overall assessment of starting up a project process has strong implementation trend. The exception sub process was the lack of learning from the previous projects. Which is the crucial point to avoid the same issues in the existing projects. The rest of sub process have strong implementation.

4.3.2 Initiating a Project

The initiating project is the second process of PRINCE2 PMM which contain eight processes. The preparation Risk Management Strategy is the first one and provides a strategy for managing risks. According to the assessment, the implementation level of this process is 32% which is below the average implementation level. This explain there is a problem in preparing risk management strategy which will be used as guide line for the risk management.

Configuration Management Strategy should be prepared after the preparation of risk management strategy. The information collected from the participants indicates that the implementation of the configuration management is above average with the mean value of 3.14. Though the mean value is above average, most of the participants replied natural for the question. This shows that their

gap in the creation configuration management strategy and can create miss information on how to manage the products produced during the project.

The other process included in the initiating project is quality management strategy which will create the strategy for all quality management activities in the projects. According to the information gathered, indicate there is a major gap in the quality management strategy preparation. This can affect the quality management process of the project which finally impact the project success negatively. Communication Management Strategy is one of the most critical processes in project management. This strategy defines the guideline for preparing a communication plan of the project which makes the stakeholders are updated with the current information. Base on this the researcher assess the implementation level of preparation of communication management strategy is strong with the value of 64%. This created better communication between the stakeholders of the project.

Project control methods are crucial input for the Project Board to control the projects. According to the information gathered, most of the participants agreed that project control methods are prepared for the project. This shows the preparation of the control methods has created the proper way for the board to control the projects. After those processes are executed, the next process to be implemented is the preparation of the project plan that include product description, cost, timescale and risk. This is the final plan which guides the project execution. According to the data collected, the implementation level of this process is somehow strong with the mean value of 4.48. Though still there are large amount of participants responded neutral. This indicates there is a gap in the preparation of the project plan which can lead to project failures.

The next process in the initiating part is refining the business case in a regular manner. The business case should be refined regularly in order to incorporate the changes in the proper way. Based on this the researcher tried to assess the implementation of the process and found that there is a major gap in the implementation. The data shows 42 percent of the participants disagree with the business case refining. This gap could lead to project failure due to the project deliverables failed to meet the business case. The last process of the initiating stage is preparing the project initiation document which will be an input for the next process. According to the data collected, the implementation level of this process above average but still dominated by large numbers of neutral respondents. Which shows there is a gap in preparing quality project initiation document.

Table 4. 3 Implementation of initiating process in the Agency.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Risk Management Strategy	0%	20%	48%	32%	0%
Configuration Management Strategy	0%	12%	52%	36%	0%
Quality Management Strategy	0%	16%	32%	32%	0%
Communication Management Strategy	0%	0%	36%	64%	0%
Project control methods are designed	0%	0%	36%	48%	16%
Project Plan is prepared	0%	0%	0%	52%	48%
The Business Case is refined properly.	16%	28%	36%	4%	16%
Project Initiation Documentation is prepared.	0(0%)	0(0%)	0(0%)	64(64%)	36(36%)

4.3.3 Controlling a Stage

The controlling stage is the process that focuses on the implementation of the project plan. The first process of the stage is making sure the work package is assigned to the implementation team. Based on the data collected, most of the participants agreed that work packages are assigned to the implementation team. The next process is reviewing the work package progress regularly. Based on the data gathered the performance of the project team is strong but there is still some gap with 16 percent of the participant disagree with this point. Checking Quality and Configuration Management is checked while receiving a completed Work Package is the other process assessed by the researcher. According to the data gathered, most of the participants are replied neutral and the second highest number of participants which is 28 percent replied they disagree with quality and configuration management checking. This indicates there is a real implementation gap in the process.

The result is the same for the process which performing continues review on the stage status. Most of the participants replied with neutral for the implementation. In addition, 28 percent of them said disagree. This indicates that there is a real gap in conducting continues review on the stage status. This could affect the effective implementation of the project and solving the issues faced by the project team at the right time. The next process assessed is whether Regular reports are sent to the Project Board or not. The information collected reveals that most of the time regular reports are sent to the project board. However still, there is a gap in the implementation of this process too.

In any project, issues & risks should be captured and examined regularly to finish the project as per the plan. Based on this, the information collected indicates there is somehow strong implementation in this process. However, it can't be concluded it is gap free because 16 percent of the participants believe that there is a real gap in the implementation. The next process is the creation exception report about Issues and Risks regularly. Exception report regarding issues and risks must be created to be communicated to the project board for a solution. After examining the implementation of the process, the finding shows most of the participants are neutral on this issue. Moreover, 28 percent of the participants replied the process is not implemented at all. Only 32 percent of the participants replied the process is implemented in the right manner. This indicates there is a real gap in the process implementation.

After those exception reports are created, they must be communicated to the project board for a solution. Regarding this most of the participants replied with neutral to the issue. Only 32 percent replied they agree that exception reports are regularly communicated with the project board. This indicates there is a serious gap in communicating exception reports to the board which can negatively affect the project performance and the implementation of the project methodology. The last process of controlling stage is about taking Corrective action. When the implementation is out the project plan corrective action must be taken to get the project back to its track. According to the participant, most of them believe corrective action is taken when they are needed.

Table 4. 4 Implementation of controlling process in the Agency.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Work Package is assigned	0%	0%	0%	52%	48%
Work Package progress are reviewed	0%	16%	12%	40%	32%
Quality and Configuration Management is checked	0%	28%	56%	0%	16%
Continues review is done on the stage status.	0%	28%	56%	0%	16%
Regular reports is sent to the Project Board.	0%	16%	51%	17%	16%
Issues & Risks are captured and examined regularly.	0%	16%	33%	51%	0%
Exception Report about Issues and Risks Created Regularly.	0%	28%	40%	32%	0%
Exception Report are sent to the Project Board Regularly.	0%	0%	68%	32%	0%
Corrective action is taken.	0%	0%	32%	68%	0%

4.3.4 Managing Stage Boundaries

Managing stage boundary is the process conducted at the end of each stage by creating a stage report and next stage-forecasting plan. According to the respondents, the implementation performance is very low. Most of the respondents are neutral about the implementation. Not only this process have this kind of performance, the other three process in this stage have also the same performance. This indicates there is a serious implementation gap in the stage which can influence the preparation of the next stage plan. In addition to this, the gap can put the project success in jeopardy.

Table 4. 5 Implementation of managing stage boundaries process in the Agency.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Create the next Stage Plan and use Product-Based Planning.	0%	16%	68%	16%	0%
Update the Project Plan	0%	32%	35%	17%	16%
Business Case must be updated	0%	44%	56%	0%	0%
Report Stage End or do the "Produce an Exception Plan" activity in this process	0%	28%	56%	16%	0%

4.3.5 Closing a Project

Closing project is the last process from the seven PRINCE2 processes which is responsible for finalizing the project implementation. Preparing planned closure is the first process in the closing stage. The participants were asked whether they prepared project closure document for the projects and replied with a response that is more neutral. This shows there is a serious implementation gap in the project team which might lead to low lesson learning practice in the agency. The next process in the closing stage is hand over products to the customer, as per the configuration management strategy document. The response of the participants is still the same which is dominated by the neutral response. This indicates the gap might be connected to the gap with the preparation of configuration management strategy document.

Compare the project objectives with the actuals and write the end project report is essential for the closing a project in an appropriate way. Evaluating project performance with the objective gives the success rate of the project. After assessing the implementation of this process, the researcher found that there is a serious gap in performing post project objective evaluation. The result shows most of the respondents replied neutral about the process. The last process of project closure sends a notification to the Project Board to close the project. The performance result collected from the

participants is almost the same as the pervious process. This leads to a delay in the closing project in a proper manner.

Table 4. 6 Implementation of closing process in the Agency.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Preparing planned closure.	0%	44%	4%	52%	0%
Hand over products to customer, as per the Configuration Management Strategy document	0%	20%	64%	16%	0%
Compare the project objectives with the actuals and write the End Project Report.	0%	20%	64%	16%	0%
Send a notification to the Project Board to close the project.	0%	4%	56%	0%	16%

4.4 PRINCE2 Principles

PRINCE2 has seven principles need to be followed in order to conduct successful project implementation. The first principle taken for performance evaluating is continued business justification are performed regularly. The result shows there is a serious problem in the implementation of the principles. The other principles need to be followed in project implementation is the conducting lesson learning practice regularly. The result shows there is a huge gap in the following principles since most of the participants replied neutral to the question. This could impact the project out since it's not updated to the customer specification. The gap on these principles has its own impact on the implementation of the process called learning the pervious projects. As we have seen in learning from the previous projects, the gap is created because the team doesn't conduct the PRINCE2 principle in a proper way.

Successful implementation of projects requires every member to have defined role and responsibility. The question was asked for the participants about the role and responsibility of the project team, most of the participants have agreed that role and responsibilities are defined

properly. This helped the team to understand their responsibilities and perform in a collaborative manner. The next principle is giving focus on the product specification in each stage for better project performance. From the collected data, 48 percent of the respondents agree the give focus on product specification whether they meet the expectation or not. The other 32 replied neutral to the question. This indicates the implementation has a gap could impact the project output. The last principle is whether it is necessary, information and decision are available to tailor PRINCE2 in the environment. The information collected shows 68 percent of the participants believe it is necessary resources for tailoring the framework to the project environment. The other 16 percent replied as neutral for the question. This implies necessary information and decision need to be made in order to make tailoring projects environment to the framework successfully.

Table 4. 7 Implementation of PRINCE2 principles in the Agency.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Continues Business justification are performed regularly.	0%	48%	52%	0%	0%
Lesson learning is conducted regularly.	16%	36%	32%	16%	0%
Every member of the project has defined Role and Responsibility.	0%	20%	12%	52%	16%
The team focused on the product specification in each stage.	0%	20%	32%	32%	16%
The necessary information and decision are available to tailor PRINCE2 in the environment.	0%	16%	16%	52%	16%

4.5 Challenges of PRINCE2

Every project face different challenges while its implementation. The researcher tried to identify the challenges faced by the project team during the execution. Based on this, the participants were asked if they have adequate experience about PRINCE2 framework. The information gathered shows 44 percent of them replied they do have enough experience in the framework. This implies

there is a serious experience gap in the PRINCE2 framework. In addition, the experience gap could impact project performance.

Top management support is crucial for the successful implementations of projects. According to the assessment, only 43 percent of the participant believes there is strong top management support in the project. In addition, 32 percent of the respondents replied there is a lack of top management support. This implies the top management lack commitment to provide the support needed for the project team. The other challenge raised by the participants is the availability of resources needed for the project execution. Only half of the participant replied the necessary resources are supplied to the project. This shows the resource supplied to project is not adequate so projects can be finished as per the specification.

When the organizational structure plays important role in realizing effective project implementation. However, the information collected doesn't show the above situation. Only 32 percent of the participant believes the organizational structure is suitable for effective project implementation. This implies the organization structure does not provide the environment for effective project execution. The other challenge identifies by the researcher is a lack of effective communication between the stakeholders. When there is an effective communication between parties, the project execution can be efficient. However, the data doesn't support the above argument. Only 32 percent of the participants believe there is effective communication between the stakeholders.

The same works for the existing of effective methods for tailoring the framework with the project environment. Only 32 percent of the participants believe there is an effective method used by the Agency for tailoring the framework. This shows there is a serious gap in tailoring the methodology. Different papers discussed the effectiveness of project management methodologies depends on the organization capability in tailoring the framework to the specific project environment. The other challenge faced by the project team is a lack of necessary training on project management. The data collected shows that only 53 percent believe the necessary training is given to boost their competency. This implies there is a knowledge gap among the project team and could lead to poor project management performance.

The next challenges explored by the researcher is the team integration in the project execution. The data collected shows only 48 percent of the participants believe there is effective team integration in project execution. This implies there is a gap in team integration which can also affect the project schedule and cost management. The last challenges analyzed by the researcher is lesson weren't taken from the previous projects. Based on the data gathered, only 53 percent of the respondent believe important lesson from the previous project is taken. This indicate the lesson taking the trend from previous projects is weak.

Table 4. 8 challenges that are faced by the project team.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
There is adequate PRINCE2 experience.	2%	33%	21%	36%	8%
There is adequate top management support.	0%	32%	25%	33%	10%
There is adequate resource	0%	20%	32%	39%	12%
The organization structure adopted by the institution supports the effective implementation of the projects.	0%	36%	32%	32%	0%
Proper methods for tailoring the methodology are used.	0%	36%	32%	32%	0%
There is effective communication among the stakeholders.	0%	24%	44%	32%	0%
The necessary training is given to project staff to improve their competence.	0%	32%	15%	40%	13%
There is strong team integration in the implementation of the projects.	0%	48%	4%	32%	16%
Important lesson from previous projects were taken.	0%	18%	29%	51%	2%

4.6 Factors that can affect PRINCE2

The next issues about the factors that can affect the implementation of PRINCE2 and project performance. There are different variable that can affect project performance and PRINCE2 implementation. However, for this study, five factors are selected to be tested in the Agency project implementation.

The other evaluation done on this study is the performance of each affecting factors on the implementation of PRINCE2. This evaluation is conducted using the five factors performance on each selected projects. The following table will describe the relation of the factors and the implementation of PRINCE2. The project team respondents were asked to indicate the extent to which the selected factors performance of the PRINCE2 implementation in the Agency on five point scale (Where: 1= strongly disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = strongly agree). Accordingly, the mean value between 1 and 1.49 implies strongly disagree, mean value greater than 1.49 and less than 2.49 shows disagree, mean value greater than 2.5 and less than 3.49 shows neutral, mean value greater than 3.5 and less than 4.49 indicate agree, mean value greater than 4.5 and less than 5 shows strongly agree for the factors selected.

Table 4. 9 Factors performance in PRINCE2 implementation.

	Risk Management	Communication Management	Organizational Structure	Tailoring	Competency
Mean	**2.97**	**3.40**	**3.38**	**2.94**	**3.05**

The performance of risk management in the selected projects are presented in the above table. According to the result, the risk management has registered underperformance with the mean value of 2.97. Communication management has better performance compared to the risk management however still it shows there is a performance gap. The result for organizational structure effectiveness in the projects shows close to communication management. The mean value 3.38 shows the effectiveness of the organizational structure is above the average. However, the overall performance still has a gap needs to improve in order to increase the project implementation performance. According to the result, the usage of effective tailoring method in the projects was below the expectation. The complete result shows there is a gap in selecting and usage of proper

tailoring methodology in integrating PRINCE2 framework with the project environment. Tailoring is one of the major factors which make project management methodology effective improving project success.

The last factor is the competency of the project management which includes the knowledge, skills and experience in project management. The result implies the competency of the project is under the expectation. The general result of the competency level of the team shows there is a real gap in knowledge and experience in project management specifically in PRINCE2 framework which could negatively impact the PRINCE2 implementation as a result could harm the project performance. The result found in the interview also indicate there is a gap in the competency to implement the framework effectively.

4.7 Relative Importance Index

Relative importance index tool is used to assess the waited impact of the actors on the implementation of PRINCE2 or in another word, to rank the factors according to their relative importance. Base on the mathematical equation (1), the result of the factors are presented in the table (4.11).

$$RII = W/ A*N \qquad (0 \leq RII \leq 1) \qquad (1)$$

Where:

W – is the weight given to each factor by the respondents and ranges from 1 to 5, (where “1” is “strongly disagree” and “5” is “strongly agree”);

A – The highest weight (i.e. 5 in this case) and;

N – The total number of respondents.

Table 4. 10 RII result of factors that affect PRINCE2

S/No.	Factors that affects PRINCE2 implementation	RII	Rank	Transformed Value
1	Organizational Structure	0.710	1	H–M
2	Communication Management	0.708	2	H–M
3	Tailoring PRINCE2	0.698	3	H–M
4	Project Team Competence	0.602	4	H–M
5	Risk Management	0.524	5	M

According to the Relative Importance Index, the result presented in table 4.11, most of the factors used in the study have a high medium impact on the implementation with the value between 0.602 and 0.710. Organizational Structure has a high impact on PRINCE2 compared to the other factors with the RII value 0.710. Communication management has an impact close to organization structure with RII value of 0.708. From the factors selected for this study, risk management has the lowest impact on the PRINCE2 implementation relative to the other. Finally, the study has found that the four of selected factors considered significance impact on the implementation of PRINCE2 PMM. Risk management is considered insignificance with the RII value less than 0.599.

4.8 Interview Results

Before adopting any framework as a guide line to any organization, there must be clear understanding on the how to implement the procedures or standards listed in the framework. Based on this the researcher asked the interviewee about the level understanding on PRINCE2 in the Agency. The findings shows there is a gap in clearly understanding the framework. The first area mentioned by the interviewee as a gap was the organizational structure used to implement projects. The structure of the project team is one the theme that must be implemented as per the guide line. However, the decision for creating the project structure is somehow vulnerable to subjectivity of the management. In addition to this, the result indicates the Agency has a gap in defining role and responsibilities in the projects.

Organizations needs to tailor PRINCE2 framework according to the size, complexity and environment to get the better out the methodology. One of the issues raised during the interview

was the absence of proper methods to make the framework fit in the Agency working environment. Related to this issue, the interviewees believes that there is knowledge gap in analyzing the project and creating the right method to tailor the framework. Moreover, they stated that this created difficulties in practicing the framework in the right manner and project member are exposed to more documentation which could be avoid by tailoring the framework with the project environment.

The other issue mentioned by the interviewee as gap in PRINCE2 understanding was the construction the business case. Business case is the other theme which must be addressed to according to the guideline. However, the interviewee mentioned that when business case is prepared, there is a gap in fully understanding what the business require to achieve the organization strategies. These could be not clearly understanding what the customer want to have and implemented it in the wrong way which could finally fail to deliver what it was expected.

PRINCE2 process are predefined steps or project cycle which must be followed to create the result expected. The interviewees stated that though the processes are implemented, there is still gaps in preparing quality strategy documents such a risk management, quality management, communication management and other strategy document. According to the interviewees the gaps in the document has been creating negative impact on handling risks properly, stakeholder engagement and assuring quality of the project deliverables.

The framework have seven principles that must be followed by every project to call the project as PRINCE2 projects. To understand to what extent do these principles are applied to projects, the researcher asked question for the interviewees. They replied that the principles are not implemented as they supposed to be. The first issued raised was the lesson learning from experience. One of the reason mentioned is the gap in close project properly and document any lesson learned while the implementation of the project. In addition to this, the culture to take lesson from previous project when new project start implementation.

The other major issue the raised from interviewees was the lack of continues business justification of the projects. Project needs to be justified start from the beginning until the last stage of the implementation. However according to the interview result, there is a gap in conducting continues business justification to make sure the project is worth to implement. Failing to implement business

justification made the Agency to engage in implementing and waste the resource available in projects which are not worthy executing.

The overall practice level of PRINCE2 themes are also have a problem in the implementation of the projects. Some of principles are discussed in the first parts of the question such us organization of the projects and business case. Change management is helpful way of managing changes in the projects. Even if the change management is conducted when issues are raised in the project, but there some gaps needs to be corrected related to communication with the stakeholders. This gap had negative impact on the performance of the projects. Risk are identified and handled in the projects however the absence of quality risk management strategy there are some problems in the implementing the risk management processes.

According to the interviewees, the overall practice of PRINCE2 framework had some gaps which needs to have some attention by the management in order to make the better out of the framework. With the gap mentioned in the PRINCE2 processes, principles and themes, the interviewee agreed that there is a serious gap in the implementation practice of PRINCE2.

There are some challenges mentioned by the interviewees in the practicing the PRINCE2 framework. The major challenges mentioned are the lack of adequate knowledge and skills in the framework, gap in effective communication with stakeholders, absence of necessary resource to implement the project, lack of team integration and not learning from experience. These are the challenges raised by the interviewees to be solved by the top management to create better result using PRINCE2 framework.

CHAPTER FIVE

SUMMARY, CONCLUSION & RECOMMENDATION

5.1 Summary

This part will summarize the key findings of the study related to the research question prepared in the first chapter. Based on this, the summary is grouped into four major groups which are PRINCE2 process, Principles, challenges faced by the project team while the implementation period and the factors which affect the project implementation.

The assessment was conducted in order to determine the implementation level of PRINCE2 in the selected projects. Based on this the project starting up process has 77 percent of implementation while the initiating process had 56 percent of implementation. The controlling process had the lowest implementation score with a level of 47 percent. Managing stage boundary had the implementation level 17 percent. The final process which is the closing project has scored 25 percent of implementation level. PRINCE2 has principles which guide the project implementation as a framework. The implementation of the principles is around 50 percent. The average implementation level of PRINCE2 is 45 percent which is below the 50 percent.

Every project team faces different challenges while the implementation of the projects. According to the study, 57 percent says there is a gap in the necessary knowledge and experience in the project. Likewise, 59 percent believes that the top management doesn't support project management implementation. Resource availability in the project implementation had a score of 51 percent. Effective organization structure is crucial for successful project implementation however, the result shows only 32 percent believe there is effective organizational structure in the Agency. The above case had the same result with tailoring and communication among the stakeholders. The existence of integration between the teams in the project had only 48 percent implementation. The last challenge faced by the project team was the failures in taking a lesson from the previous project. The implementation level of lesson learning is around 53 percent.

To analyze the effect of selected independent variables on the dependent variable, multiple linear regression is used. The study used two models with two dependent variables and five dependent variables. The results show risk management, communication management and competency of the

project team has a positive effect on both dependent variables while the organizational structure and tailoring PRINCE2 to the project environment has an inverse relationship with the dependent variables. In addition, the two models R square shows 49 and 51 of the variance in the two dependent variables are explained by the selected independent variables.

5.2 Conclusion

The study has been conducted to assess the practice and challenges of PRINCE2 PMM in information technology projects in the case of Information Network Security Agency. To assess the practice and challenges of the methodology, four projects were selected. Based on the findings, the following conclusions were made.

Regarding the practice of PRINCE2 implementation level on the selected projects, the study found that practice of PRINCE2 in the agency had a serious gap. With less than 50 percent performance in the processes, the study can conclude that the practice of PRINCE2 process is below the expected level. Important strategies are not prepared as they supposed to prepare. Lessons learning are not conducted and projects are not evaluated whether the met their objective or not. The overall performance is below average.

Not only are the practice of the processes, the PRINCE2 principles also not conducted as they should. The overall practice level shows that there is a serious gap in the selected methodology. Business are not always justified to make sure the projects are still worth to implement. The study also showed there is a gap in tailoring the framework to project environment as result the definition of role and responsibilities face challenges in getting fit with projects.

PRINCE2 themes also have problems in their implementation. The theme which deals with creating organization structure have problem in meeting the requirement of the framework which cause different problems such as an appropriate role and responsibilities in project implementation. The level of implementation of planning theme was good. Risk theme has one of the theme which performed average due to the reason of not having proper risk management strategy. The same can be concluded for quality theme which lack effective quality management strategy.

Related to the challenges faced during the implementation, the researcher was able to conclude that the resources needed for the implementation and the top management commitment to support are very low. The experience of the project team, communication with stakeholders, and

integration between the project team, effective organizational structure and tailoring framework had also poor implementation level. Training given to the project team about the PRINCE2 found low and so as the taking lesson from the previous project.

5.3 Recommendation

Based on the finding and conclusion made by the study, the researcher recommended the agency to give attention to the following points in order to improve the implementation level of PRINCE2 PMM. As a result, the performance level of the projects in the agency will be improved.

- The top management must support the project implementation by providing the necessary resource, effective organizational structure and creating smooth team integration.
- The Agency is recommended to give the proper training on the PRINCE2 Framework to improve the knowledge and skills of the team.
- The Agency is recommended to implement different strategies to boost communication between the stakeholders.
- The Agency need to give attention on creating effective strategies for risk and quality management.
- The Agency must capture an important lesson from the previous project to prevent the same issues from happening for a second time.
- The Agency must use effective methods in tailoring PRINCE2 into the project environment.
- PRINCE2 Agile is the newly released framework especially, for IT projects with the governance of PRINCE2 and flexibility of Agile. Based on this I recommend the Agency to adopt PRINCE2 Agile to boost the project performance.

5.4 Suggestion for future research

In the year, 2016 AXELOS released a new concept in project management methodology by integrating the concept of agility in the governance and structure-based methodology. In the modern world, IT projects needs some flexibility in their implementation. Because of this PRINCE2 Agile came to existence and provide more flexibility than PRINCE2. Based on this, the adoption of the framework needs some research on how to tailor to the existing IT projects. Therefore, this could give some research direction to interested researchers in this area.

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APPENDIX

ST. MARY'S UNIVERSITY

SCHOOL OF GRADUATE STUDIES

TITLE OF THE THESIS: PRACTICES AND CHALLENGES OF PRINCE2 METHODOLOGY IN IT PTOJECTS IMPLEMENTATION: THE CASE OF SELECTED ORGANIZATION BASED IN ADDIS ABABA

Dear respondent,

Introduction: Thank you for your willingness to participate in this study as a respondent. This questionnaire is used to collect data for the partial fulfillment of Master of Project Management. The researcher assures you that the information you provide used only for academic research purpose and anonymity of the respondent maintained throughout the research process. Thank you for your cooperation.

Kind Regards

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SECTION A: GENERAL INFORMATION

1. Education Background

a) Graduate (MSC) ☐ **c) Undergraduate (BSC)** ☐

b) Diploma ☐ **d) High school complete** ☐

e) If other, please specify_____

2. Gender

a) Female ☐ **b) Male** ☐

3. Position

a) Project Manager ☐ **c) Middle level Manager** ☐

b) Technical Team Leader ☐ **d) Top level Manager** ☐

4. What are your years of experience in this field? _____ Years.

5. Do you implement Project Management Methodology in your projects?

a) Yes ☐ **b) No** ☐

SECTION B: PRINCE2 PMM PRACTICES AND CHALLENGES

In your experience, please indicate the PRINCE2 Project Management Methodology practices which cut across the PRINCE2 emphases of technical and process aspects of the INSA IT Projects by ticking the appropriate boxes. The following statements are issues related to implementation of PRINCE2 Project Management Methodology. Please Mark the Appropriate Answer by (√), Using the key **(Where: 1= Strongly disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly agree).**

No.	Practices of PRINCE2 methodology	Degree of Agreements				
P1	**Starting up a project (SU)**	**1**	**2**	**3**	**4**	**5**
1	Lesson is captured from the previous projects.	☐	☐	☐	☐	☐
2	Business case outline is prepared.	☐	☐	☐	☐	☐
3	Project Product Description (PPD) prepared.	☐	☐	☐	☐	☐
4	The project approach is selected.	☐	☐	☐	☐	☐
5	Project Brief Document is prepared during this stage.	☐	☐	☐	☐	☐
6	The Project Initiation plan is prepared properly.	☐	☐	☐	☐	☐
P2	**Initiating a Project(IP)**					

1	Risk Management Strategy is prepared properly.					
2	Configuration Management Strategy is prepared properly.					
3	Quality Management Strategy is prepared properly.					
4	Communication Management Strategy is prepared properly.					
5	Project control methods are designed for the Project Board to control.					
6	Project Plan is prepared including Product Description, Cost, Timescale and Risk.					
7	The Business Case is refined properly.					
8	Project Initiation Documentation is prepared.					
P3	**Controlling a Stage (CS)**					
1	Work Package is assigned to the implementation Team.					
2	Work Package progress are reviewed regularly.					
3	Quality and Configuration Management is checked while receiving completed Work Package.					
4	Continues review is done on the stage status.					
5	Regular reports is sent to the Project Board.					
6	Issues & Risks are captured and examined regularly.					
7	Exception Report about Issues and Risks Created Regularly.					
8	Exception Report are sent to the Project Board Regularly.					
9	Corrective action is taken.					
	Managing Stage Boundaries(MS)					
1	Create the next Stage Plan and use Product-Based Planning.					
2	Update the Project Plan					
3	Business Case must be updated with the latest costs of the last stage					
4	Report Stage End or do the "Produce an Exception Plan" activity in this process					
	Closing a Project(CP)					
1	Preparing planned closure					

2	Hand over products to customer, as per the Configuration Management Strategy document					
3	Compare the project objectives with the actuals and write the End Project Report.					
4	Send a notification to the Project Board to close the project.					
T	**PRINCE2 Principles**					
1	Continues Business justification are performed regularly.					
2	Lesson learning is conducted regularly.					
3	Every member of the project has defined Role and Responsibility.					
4	The team focused on the product specification in each stage.					
5	The necessary information and decision are available to tailor PRINCE2 in the environment.					
	Challenges of PRINCE2 Implementation					
1	There is adequate PRINCE2 experience.					
2	There is adequate top management support.					
3	There is adequate resource for the implementation of the projects					
4	The organization structure adopted by the institution supports the effective implementation of the projects.					
5	Proper methods for tailoring the methodology are used.					
6	There is effective communication among the stakeholders.					
7	The necessary training is given to project staff to improve their competence.					
8	There is strong team integration in the implementation of the projects.					
9	Important lesson from previous projects were taken.					

SECTION C: IMPLEMENTATION OF QUALITY MANAGEMENT

The following statements are issues related to level of implementation of PRINCE2 Project Management Methodology. Please Mark the Appropriate Answer by (√), Using the key (Where: 1= Very Low, 2 = Low, 3 = Medium, 4 = High, 5 = Very High)

No.	Factors that can affect project performance	Degree of Agreements				
	Risk management	**1**	**2**	**3**	**4**	**5**
1	Risk identification is done.					
2	Risk Analysis is performed.					
3	Risk response plan is prepared.					
4	Risk response plan is implemented.					
	Communication management					
1	Stakeholders are effectively identified.					
2	Communication plan is prepared.					
3	Information are distributed to stakeholders regularly.					
4	Performance reports are prepared according to the plan.					
	Organizational Structure					
1	Role and responsibilities are clearly identified.					
2	There is effective integration between the management.					
	Tailoring					
1	There is clear understanding on PRINCE2 framework.					
2	There is an agreement on how to implement the framework.					
	Competency of the project team					
1	There is knowledge sharing between the project team.					
2	Trainings on PRINCE2 are given to the project team.					
3	Project managers have the personal skills to perform the job.					

Interview questions for PRINCE2 implementation in the agency

1. How do you describe the understanding of PRINCE2 methodology in the Agency?
2. How do explain the practices of PRINCE2 processes in the Agency Projects?
3. How do explain the practices of PRINCE2 Principles in the Agency Projects?
4. How do explain the practices of PRINCE2 Themes in the Agency Projects?
5. What do you measure the overall PRINCE2 practice level in the Agency?
6. What are the challenges that the Agency faced during the PRINCE2 Implementation?

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Lesson is captured from the previous projects.	197.21	1009.198	.345	.975
Business case outline is prepared.	196.69	1013.529	.287	.975
Project Product Description (PPD) prepared.	196.53	995.969	.540	.974
The project approach is selected.	196.45	995.765	.724	.974
Project Brief Document is prepared during this stage.	196.25	1004.755	.752	.974
The Project Initiation plan is prepared properly.	196.53	1025.666	.119	.975
Risk Management Strategy is prepared properly.	197.41	1019.537	.228	.975
Configuration Management Strategy is prepared properly.	197.29	1017.602	.299	.975
Quality Management Strategy is prepared properly.	197.57	1021.945	.148	.975
Communication Management Strategy is prepared properly.	196.89	1008.543	.708	.974
Project control methods are designed for the Project Board to control.	196.73	991.048	.888	.974

Project Plan is prepared including Product Description, Cost, Timescale and Risk.	196.05	1003.381	.844	.974
The Business Case is refined properly.	197.77	982.421	.594	.974
Project Initiation Documentation is prepared.	196.17	1006.486	.776	.974
Work Package is assigned to the implementation Team.	196.05	1003.381	.844	.974
Work Package progress are reviewed regularly.	196.65	984.068	.696	.974
Quality and Configuration Management is checked while receiving completed Work Package.	197.49	988.778	.840	.974
Continues review is done on the stage status.	197.49	978.717	.843	.973
Regular reports is sent to the Project Board.	197.20	988.646	.698	.974
Issues & Risks are captured and examined regularly.	197.18	999.179	.654	.974
Exception Report about Issues and Risks Created Regularly.	197.49	993.909	.734	.974
Exception Report are sent to the Project Board Regularly.	197.21	1018.127	.405	.974
Corrective action is taken.	196.85	1012.614	.591	.974

Create the next Stage Plan and use Product-Based Planning.	197.53	1007.868	.617	.974
Update the Project Plan	197.36	996.253	.497	.974
Business Case must be updated with the latest costs of the last stage	197.97	1020.898	.293	.975
Report Stage End or do the "Produce an Exception Plan" activity in this process	197.65	995.967	.823	.974
Preparing planned closure.	197.45	1010.896	.298	.975
Hand over products to customer, as per the Configuration Management Strategy document	197.57	1019.561	.275	.975
Compare the project objectives with the actuals and write the End Project Report.	197.57	1019.561	.275	.975
Send a notification to the Project Board to close the project.	197.25	994.694	.715	.974
Continues Business justification are performed regularly.	198.01	1020.010	.318	.975
Lesson learning is conducted regularly.	198.05	996.614	.551	.974
Every member of the project has defined Role and Responsibility.	196.89	983.149	.755	.974

The team focused on the product specification in each stage.	197.09	980.285	.795	.974
The necessary information and decision are available to tailor PRINCE2 in the environment.	196.85	990.028	.676	.974
There is adequate PRINCE2 experience.	197.38	1003.854	.388	.975
There is adequate top management support.	197.32	975.755	.853	.973
There is adequate resource for the implementation of the projects	197.07	987.844	.727	.974
The organization structure adopted by the institution supports the effective implementation of the projects.	197.57	999.399	.581	.974
Proper methods for tailoring the methodology are used.	197.57	1006.813	.437	.974
There is effective communication among the stakeholders.	197.45	997.866	.678	.974
The necessary training is given to project staff to improve their competence.	197.19	978.236	.767	.974

There is strong team integration in the implementation of the projects.	197.37	960.357	.927	.973
Important lesson from previous projects were taken.	197.16	992.681	.737	.974
Risk identification is done.	197.17	1029.415	.027	.975
Risk Analysis is performed.	197.77	1006.886	.559	.974
Risk response plan is prepared.	197.61	997.089	.523	.974
Risk response plan is implemented.	197.90	987.303	.725	.974
Stakeholders are effectively identified.	196.53	984.736	.894	.973
Communication plan is prepared.	196.53	995.343	.680	.974
Information are distributed to stakeholders regularly.	197.21	1018.127	.405	.974
Performance reports are prepared according to the plan.	197.33	1006.304	.589	.974
Role and responsibilities are clearly identified.	196.85	979.341	.908	.973
There is effective integration between the management.	197.13	970.074	.834	.973
There is clear understanding on PRINCE2 framework.	197.17	958.971	.868	.973

There is an agreement on how to implement the framework.	197.65	950.795	.987	.973
There is knowledge sharing between the project team.	197.77	968.947	.903	.973
Trainings on PRINCE2 are given to the project team.	197.33	961.132	.859	.973
Project managers have the personal skills to perform the job.	196.85	994.230	.768	.974

DECLARATION

I, the undersigned, declare that this thesis is my original work, prepared under the guidance of Dr. Maru Shete. All sources of materials used for the thesis have been duly acknowledged. I further confirm that the thesis has not been submitted either in part or in full to any other higher learning institution for earning any degree.

Name	**Signature**
St. Mary's University, Addis Ababa	**July 1, 2019**

ENDORSEMENT

This thesis, titled "Practices and Challenges of Prince2 Methodology in It Projects Implementation: The Case of Selected Organization Based In Addis Ababa" has been submitted to St. Mary's University, School of Graduate Studies for examination with my approval as a university advisor.

_____	_____
Advisor	Signature
St. Mary's University, Addis Ababa	July 1, 2019