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Factors Impacting Implementation of Projects in Botswana

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Declaration

The work contained in this dissertation was completed by the author at the University of Botswana between 2012 and 2014. It is original work except where due reference is made and neither has been nor will be submitted for the award of any other University.

Signed:……..

Date:…….

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Abstract

This dissertation reports on a research that continues a long tradition of exploration of factors which positively influence implementation of projects. The research was based in Botswana and the empirical survey only covered project personnel employed by Botswana based organisations. The dissertation investigates and identifies the factors and goes further to analyse these factors to determine if their importance is perceived differently across private and public sectors. A literature review was carried out to identify the factors and find out what various scholarly authors have deduced about them. The presumption was then compared with the results of the survey, both of which revealed that all factors identified were crucial for project success even though some factors were deemed more important than others. The research has also shown that in both private and public sectors, it is important that management attention should be more productively focused on creating the kind of organisational environment or culture that has been shown to be conducive to successful project outcomes.

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CHAPTER 1

1 INTRODUCTION

1.1 Background

Project management has taken up a very significant role within organisations across all industries in Botswana over the past couple of years. Kippenberger (2002, p.1) emphasises the role that project management plays in successful implementation of business strategies. Any project approved for implementation within the organisation is expected to be in line with the company's ultimate goals and strategies, making successful project implementation directly related to successful implementation of the business strategy. Generally project management and implementation underpin much economic activity and projects drive business success. It is therefore imperative for organisations to be aware of factors which positively impact project implementation in order for them to increase chances of project success. This will ensure effective control and continuous improvement for successful implementation of future projects.

Plessis & Hoole (2006, p.37) emphasise that having a good appreciation of these factors will ensure that common pitfalls which result in project failure may be avoided. This will also promote good project management and implementation principles would be fostered into the culture of the organisation. This allows organisations to systematically and quantitatively assess these critical factors, anticipating possible effects and then choosing appropriate methods of dealing with them. Once the factors are identified, assessed and understood, this could aid project managers and organisations to somewhat improve level of project success.

The importance of successful project implementation has become apparent in Botswana. Organisations such as commercial banks and government departments have set up well established project management offices which are crucial in the implementation of all new projects and changes. Setting up such independent project offices ensures availability of well trained personnel, with good knowledge of project management and ability to coordinate all activities involved in successful project implementation. The project management offices should represent a knowledge base that is able to share project management best practices with other departments within the organisation.

1.1.1 What is a Project?

Office of Government Commerce (2005, p.7) defines a project as a management environment that is created for the purpose of delivering one or more business products according to a specified business case. A project has a defined deliverable, which could be a product, system, a new building, etc. This deliverable must be of sufficient quality to serve its intended purpose. It is intended to allow a step change from one level of business-as-usual to another and has a defined start and end date. This is specifically meant to constrain the amount of money spent on the project since a delay in completion means more money would be spent. Also, a project is intentionally a temporary organisation specific to delivering a defined product. Therefore if there are no defined timelines, resulting in a delay in project completion, those people working temporarily on the project cannot be released for other work.

A project also has a defined budget, which is meant to ensure that project spending is controlled. Overspending in projects could leave the organisation in a funding deficit

which could in the end leave the organisation in debt. A well thought out and realistic budget is therefore very crucial for any project being implemented. The budget should cover all major areas of expenditure. The third component that a project possesses is a life cycle. A project should have a beginning, middle and an end. All these are very important stages of the project, for different reasons, and could benefit from some order and governance. Prior to commencement of a project, the organisation should have spent some time considering opportunities on which to invest its money. After completion of such a project the wider organisation should then be asking to know the extent to which the benefits of the project are being realised.

A project brings about changes which may transform processes, performance and culture of the organisation. It must produce something which has not been produced before, at least not in the same circumstances. This therefore renders any project risky and unique. There are always expectations for when the project will be completed, how much it will cost and its expected deliverables. At the end of the day, a combination of a project's risky nature and the wide organisation's desire to successfully complete the project, should cause the need to think about the importance and necessity of project management (Roberts, 2011, p.5-9).

1.1.2 Project Management

Project management is a discipline of planning, organizing, securing, managing, leading and controlling project resources. The resources, employed to achieve specific goals, could be financial, human, etc. Project management concerns itself with achieving goals of a project while at the same time adhering to the primary constraints of a project which include time, budget, scope and quality. The principal challenge of

this discipline is to optimise the allocation of necessary inputs, and integrate the inputs to meet the project's predefined objectives. It focuses on controlling introduction of the desired change. Successful project management, for projects of all sizes tends to follow the process outlined below:

- Understanding the needs of the project stakeholders.
- Planning what needs to be done, when, by whom and to what standards.
- Building and motivating a project team.
- Coordinating the work of different work streams through subject matter experts.
- Monitoring work being done.
- Managing any changes to the project plan.
- Delivering successful results.

Project management provides a framework towards a structured approach to delivering projects. A number of formal methodologies can be employed to achieve this. These project management methodologies combine a framework or approach with a set of project tools and guidelines. The methodologies may vary in scale and complexity, but they are all based on a simple core of common sense principles. Project Management should therefore not be taken as a minefield of jargon and bureaucracy. Most of it is plain common sense and most of the methodologies adopted in project management are simply a structured approach to what people will basically do instinctively. This common sense is however informed by previous background, exposure and the environment (Passenheim, 2009, p.9-21).

1.1.3 Project Success

As organisations are increasingly becoming project based and daily work is organised into programmes of projects, organisational success is hugely becoming dependent on good and successful management of these projects. It is crucial to ensure that the right projects, aligned to organisational strategy, are carried out. Project success is a topic that has increasingly gained popularity and is frequently discussed, but is rarely agreed upon. Kuen, Zailani & Fernando (2009, p.17) state that "the views of project success have evolved over the years, from simple definitions that were limited to the implementation phase of the project life cycle, to definitions that reflect an appreciation of success over the entire project and product life cycle."

Different organisations have different levels of expertise within their project management functions. They have realised that to be successful at project management and implementation, a better approach to project management is more than necessary. It is for this reason that organisations have started adopting the use of project management methodologies such as PRINCE 2. Other project management guide of standards applied on most projects, include PMBOK and others. This is however just a starting point since success will not be achieved by merely employing a methodology. A thorough understanding of critical success factors which lead to successful project implementation is crucial. Project success is therefore simply defined as successfully delivering a project according to customer or end-user requirements and expectations, within agreed schedule and budget.

1.2 Purpose and Aim of the Research

The process of project management and implementation is a complex one and presents an ongoing challenge to managers across all industries. Projects are usually unique and often are associated with unknowns, complexity, and uncertainty. Obviously, a project manager's role is more challenging than that of a typical, functional manager. In addition to working across functional and organizational environments, the project manager has other challenges such as providing leadership without documented, formal authority, and working in matrix organizations where unity of command is an issue (Anantatmula, 2010, p.14). As a consequence of this difficult position, the project manager would be greatly served by information about specific factors critical to project success.

With that in mind, this study seeks to identify and assess factors impacting success with implementation of projects. The study aimed at analysing the current gap between identified factors (practice) and comparing them to the consulted and reviewed literature (theory). Knowledge of these factors is critical to the prcject manager. This is for the simple reason that any project manager requires knowledge base to be well informed and fully equipped to devise the necessary tools and solutions which would help focus attention on important areas, and set differentiated priorities across different project elements.

The study further endeavoured to investigate these different success factors to ascertain if they influence project success in a similar manner in both private and public sectors. The study also tested if there is a significant difference between private and public sectors regarding importance of the success factors.

1.3 Research Problem / Statement

Organisations in general are experiencing major challenges with successful implementation of their business strategies through successful implementation of projects. Ika, Diallo & Thuillier (2011) allude that projects remain the instruments of choice for policy makers in development. However, the poor performance of projects and the disappointment of project stakeholders and beneficiaries seem to have become the rule and not the exception in modern-day reality. Dissatisfaction with project results and performance dates back to the 1950s (example is John F. Kennedy's speech to Congress in 1961). The project failure rate at the World Bank was over 50% in Africa until 2000. The World Bank's private arm, the International Finance Corporation has discovered that only half of its African projects succeed.

In an independent rating, the Independent Evaluation Group (IEG) claimed that 39% of World Bank projects were unsuccessful in 2010. World Bank projects all too frequently fail to achieve their goals due to a number of problems that could be termed "managerial" and "organizational", imperfect project design, poor stakeholder management, delays between project identification and start-up, delays during project implementation, cost overruns, coordination failure to mention but a few (Ika et al. 2011). Project Management literature has focused very little on project success, success criteria and critical success factors (Ika et al., 2011).

Organisations in Botswana have not been spared the disappointment. According to Kaboyakgosi & Sengwaketse (2003), an evaluation of the cost performance of public construction projects in Botswana concluded that there were four critical contributory factors to construction cost overruns. These were incomplete designs at the time of

tender, additional work at the client's request, changes in client's brief and lack of cost planning/monitoring. According to the evaluation, three other factors which were normally ignored, but contributed to cost overruns, included delays in issuing information at the construction stage, technical omissions at the design stage and contractual claims such as extension of project time with cost claims (Kaboyakgosi et al., 2003).

The main issue of contention, as evidenced by the literature above, is that implementing organisations, together with their responsible project managers are not certain of factors which impact project implementation success. Project implementation has increasingly become a trial and error process with organisations pinning all their hopes on the poor project managers. In most cases the project managers have no defined support structures or enablers in place to facilitate project success and continuous improvement of the project implementation process.

1.4 Research Objectives

The main objectives of this research paper are as outlined below:

- To identify factors which positively influence project success.
- To analyse the factors to determine if their influence differ across sectors (private and public).
- To investigate if there is a significant difference between private and public sectors regarding importance of critical factors impacting project success.
- To test the reliability of the data collection instrument.

1.5 Research Questions

Emanating from the research objectives, the research seeks to address the following questions:

- Which factors positively influence project success?
- Do these factors influence project success in a similar manner in private and public sectors?
- Is there a significant difference between private and public sector regarding importance of these critical success factors?
- Is the data collection instrument (questionnaire) reliable enough to collect meaningful data?

1.6 Ethics Statement

The ethics statement of this research paper followed the ethics framework laid down by the Economic & Social Research Council as detailed in Research Ethics Framework (2008, p.3). The ethics statement is as follows:

- No physical or psychological harm will come to anyone as a result of the research.
- Participants in the study will not be deceived or coerced with leading statements or false information.
- Products of the study will be kept in the strictest confidence.
- Participation in the research study will be strictly voluntary.
- Any form of compensation for participation will not affect the application of these ethical principles.
- Subjects will not be coerced into participating in the research study.

- Information which identifies responses given by individuals will not be released.

1.7 Definition of Terms and Concepts

- **Private Organizations:** In this paper, private organizations refer to privately owned and run organizations which do not rely on government or charities for funding. These organizations generate their own revenue by providing products or services at a cost.
- **Public Organizations:** Public organizations are those organizations which are owned and operated by government. In Botswana these organizations include government ministries, local authorities and parastatals.
- **Project Management Office (PMO):** A department or division that is responsible for defining and maintaining standards of process, generally related to project management within organizations.
- **Project Management Methodology:** A systematic way of delivering projects which sets out the entire Project Life Cycle step-by-step, so that project management teams can employ a uniform project management process for delivering projects.
- **Organisational Culture:** The behavior of humans who are part of an organization and the meanings that the people attach to their actions. Culture includes the organisational values, visions, norms, working language, systems, symbols, beliefs and habits.
- **Risk Management:** Identification, assessment, and prioritization of risks, followed by coordinated and economical application of resources to

minimize, monitor, and control the probability and/or impact of unfortunate events or to maximize the realization of opportunities.

1.8 List of Acronyms

- **PMBOK –** Project Management Body of Knowledge
- **CIO Council** – Chief Information Officers Council
- **PMI** – Project Management Institute
- **PMO –** Project Management Office
- **SOX** – Sarbanes Oxley
- **ISO –** International Organisation for Standards
- **ANSI –** American National Standards Institute
- **PRINCE 2 –** Prcjects IN Controlled Environments
- **PMP –** Project Management Professional
- **PRiSM** – Projects integrating Sustainable Methods
- **IPMA** – International Project Management Association
- **SWEBOK –** Software Engineering Body of Knowledge
- **CMMI** – Capability Maturity Model Integrated
- **IEEE –** Institute of Electrical and Electronics Engineers
- **WBS –** Work Breakdown Structure

1.9 Assumptions

The following assumptions were made in this research study:

- The sample is homogeneous and the results of the study will be assumed to hold true for similar organisations in Botswana. In the real world, samples

may not be homogeneous and results of a single study may not necessarily hold true for the rest of the population.

- Questionnaire respondents will not be held under any undue influence when responding to the questionnaires and will not collaborate when giving their responses.

1.10 Conclusion

This chapter outlined background of the study and the aim and purpose thereof. It presented the problem statement, objectives and research questions that the study was answering. It gives a list of terms and acronyms which were used throughout the study. The chapter also touches on the assumptions of the researcher and the statement of ethics. It basically gives the background of the project and the reasons for perusing the study.

CHAPTER 2

2 LITERATURE REVIEW

2.1 Introduction

Literature review is a critical discussion and summary of literature that is of general and specialised relevance to the particular area and topic of research. This is meant to help focus and refine the research question by articulating the knowledge gap. The review of literature in this study focuses on review of what other scholars have written about the different factors impacting successful implementation of projects. It investigates whether the identified factors influence projects in a similar manner in private and public sectors and whether there is any significant difference between the private and public sector regarding importance of the factors. The study also seeks to establish whether the data collection instrument is reliable enough to collect meaningful data.

2.2 Project Implementation Success Factors

2.2.1 Successful Project Implementation

According to Project Management Institute (2013), the traditional approach to interpreting project success is rooted in the traditional approach to projects. This means that a project is a triangle, that is, a complex task that aims at creating a predefined result within predefined time and cost constraints. Consequently, success achieved on prcjects was also interpreted based on this triangle. In this way, if the desired project result was completed according to the quality requirements, and on time and to budget, the project was considered to be successful. At the same time, the

triangle (quality, time, cost/budget) was also used to assess the success of project management. That is, if the project was completed in accordance with the predefined triangle, the management of such a project could also be deemed successful. Dinsmore & Cooke-Davies (2006, p.43) on the other hand state that project implementation success could be attributed to aligning the whole organisation behind the right projects and programs. Persistent continual improvement of all processes and practices that are crucial to the management of projects also constitute project implementation success.

If organisations require successful project implementation to survive and prosper in these increasingly challenging times, what does it take to make it happen? Different ways could be employed to attain project success. It could either be restructuring of the company, implementing new systems and bringing about new mind sets with the people involved. Even a combination of all the above factors amalgamated with other influences from the market place and new technological developments could help organisations attain project success. The major question would always be where to start making and implementing these improvements and choosing the right actions to make the most impact (Dinsmore et al., 2006, p.63).

With that question of approach in mind, there are factors in project implementation that over time have proved to be key contributors to the success of project implementation. They are however often underutilized or side lined in favour of saving time and money. When projects are implemented without taking advantage of these key factors, problems ranging from delays in project timelines, to less satisfaction from the prcject client on the final product delivered may result, which in

the end hinder successful implementation of such projects. The following factors have been identified by different scholars to impact successful implementation of projects.

2.2.2 Senior Management Involvement

2.2.2.1 Senior Management

Unger, Kock, Gemunden & Jonas (2012) write that senior management or the group of an organisation's top executives is, according to upper echelons theory, the key decision makers of an organisation. They can thus have far reaching influence on the shape of an organisation. Upper echelons theory states that organisations are a reflection of their top management teams. The theory uses their demographics as proxies to capture underlying differences in values, perceptions and influence on the process of strategic choice and consequent performance. Drawing on this theory, a group of senior managers are key decision makers in project implementation making them crucial for project implementation success.

2.2.2.2 Involvement of Senior Management in Projects

Senior management involvement includes all decisions to be taken in a project portfolio context that occur during the following activities: "(1) the initial screening, selection and prioritisation of project proposals, (2) the concurrent reprioritisation of projects in the portfolios, and (3) the allocation and reallocation of resources to projects according to priority." Senior management involvement consists of both "passive support", which is concerned with allocation of sufficient resources, and "active support", where senior managers are personally involved as visionary or project champions (Unger et al., 2012).

Executives should be actively involved during the feasibility study of the project. This is to ensure that if the study identifies any ideas which are unlikely to succeed, these executives could decide to abandon ideas as early as possible to avoid potential future failure. Senior management's major and critical role during the project life cycle is that of support to the project manager and the project team. Their philosophy is to offer the prcject manager and team a "long rope" first and only when they have not lived up to expectations will they" shorten the rope". This ensures empowerment on the part of the project manager and project team (Wysocki, 2011, p.3).

A strong and effective senior management support and shared vision is fundamental to project success. The CIO Council document states that most best practice studies agree that senior management involvement and support is a predictor for project success. The paper further cited strong leadership at the top as a success factor in the selection, evaluation and control processes associated with project success. It states that creating buy in from leadership and establishing the realms of authority are essential to performance based project success. A successful project enjoys continuous high-level support, the paper declares. The extent to which senior management is involved in all phases of the project significantly increases the prospect for success. While strong senior management support is a key ingredient to successful project delivery, such support must not only be strong, it should also be continuous. There ought to be commitment and follow through throughout all stages of the project life cycle from beginning to implementation (CIO Council).

Senior management involvement should not however be confused with an environment of micro management, where every move is observed and evaluated.

Leaders should rather create environments of active support for project managers and their project teams. Force-feeding of solutions to project teams should not be the order of the day. Teams should be encouraged to desire success and be left to create solutions which will lead them to project success. This results in feelings of empowerment by the subject matter experts who make up the project team. It also brings about a sense of commitment to the project as the team's expertise and efforts are being recognised by their seniors, making them feel worthy. Consequently, there results a marked degree of enthusiasm apparent in all individuals involved in projects as they feel like an integral part of the success of the project (CIO Council).

2.2.2.3 Project Sponsor

One of the critical roles played by senior management in projects is that of project sponsor. A prcject sponsor is defined by The PMBOK Guide® (PMI, 2008, p.25) as the *"person or group that provides the financial resources, in cash or in kind, for the project"* and further states that *"when a project is first conceived, the sponsor champions the project. This includes serving as spokesperson to higher levels of management to gather support throughout the organization and promote the benefits that the project will bring. The sponsor leads the project through the engagement or selection process until formally authorized, and plays a significant role in the development of the initial scope and charter"*. Crawford & Brett (2001, p.2) on the other hand describe the project sponsor as *"the person providing resources for a project: the person who should be responsible for ensuring that the project is successful at the business or institutional level."*

The project sponsor, according to Crawford et al. (2001, p.2), is generally expected to act, at senior management level, as an advocate for the project. He/she should ensure that the project delivers the desired business outcomes and also provides internal political support for the project by ensuring that the project gets priority for the requisite funding and resourcing. Usually, only one person is appointed as a sponsor for any given project. This person is often a member of the executive team within the organisation who can use their influence to benefit the project. Practice suggests the appointment of a project sponsor is a vital factor in project implementation success (Crawford et al., 2001, p.3).

It is generally considered that the higher the level of the project sponsor within the organisation, the higher the probability of success for that given project (Crawford et al., 2001, p.3). The most successful approach is believed to be the one where the project sponsor has vested interest in the project and is self appointed. Where a project sponsor is not appointed, it may be necessary for the project manager to identify and lobby for appointment of such a sponsor (Crawford et al., 2001, p.3). The role of the project sponsor will however ultimately be determined by the nature of the organisation and the type of project being implemented. The project sponsor's responsibilities, depending on the organisation and type of project, include allocation of project budget and resources and political support for the project. The sponsor is also responsible for alignment of project objectives to the organisational strategy, vision and policies and overall business alignment (Crawford et al., 2001, p.3-4). The project sponsor is responsible, not only for budgetary support, but also for ensuring that key business representatives play their role in the project. He/she is the key stakeholder and takes ownership of the business problem, ensuring a successful

project outcome. He/she also identifies stakeholders who will directly and indirectly be impacted by the project (Sewchurran & Barron, 2008, p.60). It is the responsibility of the project sponsor to obtain stakeholder, employee and project team buy-in to ensure success of the project. Sewchurran et al. (2008, p.60) also state that the project sponsor ultimately represents the link between the client organisation and the consultants in cases where an external organisation has been consulted to run the project on behalf of the sponsor's organisation.

Project sponsor commitment is critical to drive consensus and to oversee the entire life cycle of project implementation (Fui-Hoon Nah, Zuckweiler & Lee-Shang Lan, 2003, p.13). Fui-Hoon Nah et al. (2003, p.13) also emphasised the importance of a project sponsor for innovation success and noted that for costly, visible or radical projects, the sponsor should be a powerful individual with a high office in the organisation.

2.2.2.4 Project Steering Committee

The project steering committee, also known as the project board, is defined by the Office of Government Commerce (2005, p.395) as a body "*responsible to corporate or programme management for the overall direction and management of the project and has responsibility and authority for the project within the remit (the Project Mandate) set by corporate or programme management. It is the project's voice to the outside world and is responsible for any publicity or other dissemination of information about the project.*" The project steering committee should be chaired by the project sponsor. It should constitute representatives from all key business areas affected by the project or business functions with vested interest in the project

deliverables (Kostojohn, Johnson & Paulen, 2011, p.10). These members are appointed by the project sponsor.

This committee should meet regularly. The appropriate frequency will be dictated by the organisation's situation. If the project steering committee is not functioning well, this brings about significant problems within the project and the project manager ends up doing more work than it is necessary (Kostojohn et al., 2011, p.10). The number of members of the project steering committee should be restricted to less than six. Once they exceed around six persons, decision making becomes less effective. All steering committee members should attend steering committee meetings because they are the decision makers of the project (Garland, 2009, p.183). The project steering committee according to Garland (2009, p.183-184) have the following duties:

- Approval of terms of reference of the project steering committee.
- Approval of responsibilities of the project steering committee members.
- Provision of support for the project owner or sponsor.
- To work with key stakeholders to meet their needs and ensure their issues are addressed by the project steering committee.
- Approve appointment of the project manager and provide direction to the project manager.
- Approve responsibilities of the project manager.
- Approval of the project structure as developed by the project manager.
- Approval of reporting and communication arrangements.
- Approval of project documentation, which may include:

  - project business case, project plan, feasibility studies, concept designs, output specifications, procurement strategy and the project completion and lessons learnt reports.
- The project steering committee ensures project stakeholder engagement is being adequately addressed;
- Confirmation of the project's operating parameters and tolerances with programme management, including budget and schedule tolerances for project stages and for the project as a whole.
- Address and resolve project issues escalated by the project manager.
- Escalate issues that cannot be resolved to the investment decision.
- Approval of any material changes to project scope, budget, schedule or quality.

Garland (2009, p.184) further states that the project steering committee should be assembled at the beginning of the project, during its strategic assessment. This committee should continue its project work until the project completion report has been delivered and signed off. The frequency of the project steering committee meetings is discussed and agreed beforehand, and should be aligned to the scale and complexity of the project. The steering committee may however require to meet weekly or even more frequently when certain project circumstances dictate so. Otherwise during less critical phases during the project lifecycle, monthly meetings may just be sufficient. The major risk posed by infrequent meetings by the project steering committee is that of becoming too distant from the project. So for the committee to properly serve its purpose it should ensure frequent meetings to discuss and make decisions about the project.

2.2.2.5 The Accountable Executive

According to Office of Government Commerce (2005), the project accountable executive is ultimately responsible and accountable for realisation of the benefits of the project to the organisation. The accountable executive often assumes the role of chairperson of the project steering committee. This therefore means the accountable executive owns the project business case. This is arguably the single most important role in a project. The executive, in any particular project, should fulfil the following key roles:

- Business Leader
- Change Agent
- Decision Maker

This role is critical in determining the overall success of the project and is also responsible for ensuring the following:

- The business need is being addressed and championing of the project to corporate/programme management.
- The right project board or steering committee and project team are appointed.
- The project is reviewed regularly and authorises expenditure for the next stage or changes to the project plan.
- Ensures the project remains aligned with the organisational strategic plan, and
- Has the authority to resolve project issues which exceed the project manager's delegation.

If the project does not have a dedicated and committed accountable executive, it could be considered a car crash happening in slow motion. Murray (2010, p.9) is in

agreement with the above description of the project accountable executive. He also describes the accountable executive as ultimately accountable for the project's success and as the key decision maker in the project. The key responsibility of the accountable executive is to ensure the project's focus throughout its lifecycle is on achieving its objectives, and on delivering a product that will achieve the forecasted benefits. The account executive, and not the project manager, is responsible for ensuring that the project gives value for money. He/she must also ensure that a cost-conscious approach to the project is adopted from the onset. This will ensure the project strikes a balance in the demands of the business, the user and the supplier.

2.2.3 Project Management Office (PMO)

2.2.3.1 Definition and Role of a Project Management Office

Misner (2008, p.10) defines the Project Management Office as "*A centralised unit within an organisation or department that oversees and improves the management of projects.*" The main objective of the PMO is to ensure that all business functions within an organisation are well aligned with a common goal in mind. Misner (2008, p.30) also relays that the PMO is responsible for monitoring the portfolio of projects within an organisation. It ensures that all projects within the pipeline are prioritized according to their relative importance in meeting the strategic objectives of the organisation. The PMO is key in providing the organisation with expertise in terms of project related support and methodology. This ultimately ensures the facilitation of better resource management and improves the success rate of projects which are undertaken.

An evaluation of the responsibilities of the PMO is provided in Association for Project Management (2006, p.14). Here the PMO is described as facilitators of administrative support and assistance for project managers. It is also said to play a key role in collecting, analyzing and reporting project management information which greatly contributes towards correct measurement of project status. As gatekeepers of project management processes, the PMO ensures the assurance of project management processes. Association for Project Management (2006, p.14) further highlight other critical functions performed by the PMO. It consists of project support experts and ensures that all projects have sufficient support in terms of tools, techniques and information required. This is rolled out in the form of coaching and mentoring to project personnel and by providing specific technical support to all projects.

The PMO also promotes lessons learnt from completed projects to be adopted for future projects thus ensuring continuous improvement of project implementation. As the PMO is responsible for ensuring excellence in project execution, senior management is then able to concentrate on business decisions and manage projects by exception by approving a project plan presented by the PMO and then allowing them to implement the plan.

The importance of a PMO in a multi-project environment is established in Misner (2008, p.30). The PMO is able to effectively maximise the usage of resources across parallel efforts in a multi-project environment. This goes a long way in achieving optimisation of resources. Successful implementation of governance controls in

managing funds allocated to projects goes a long way in insuring adherence to regulatory requirements such as the Sarbanes-Oxley Act of 2002.

Gosnear, Jenner, Mee & Menke (2009, p.169-170) describe the Project Management Office as "*a functional unit that is assigned various responsibilities related to the coordination and management of those programs/projects under its domain. The PMO is also responsible for reporting on the metrics associated with all projects. The scope of the projects PMO tracks is usually dependent on where the PMO reports. The PMO could be within IT, a business unit, or at the enterprise level. There could be multiple PMOs across the organization with a dotted-line relationship to an enterprise PMO. No matter where the PMO resides, a core function of the PMO is to facilitate the process to provide timely, accurate, and credible project information to leadership so they can make informed decisions in a timely manner.*"

Newton (2010, p.207) describes the Project Management Office as a valuable part of most project management teams. He states that the PMO has various roles and should be structured according to the situation of the organisation. The PMO assists project managers, teams and various management levels on strategic matters. It also assists functional entities throughout the organisation in implementing project management principles, practices, methodologies, tools and techniques. The establishment of such an office is therefore very crucial in organisations to ensure improvement in project management effectiveness. The office enables acquisition of knowledge from prior failures and successes, also providing a range of support and facilitative services for projects as well as for various management levels and support units (Dai & Wells, 2004, p.523). They further add that an ad hoc approach to project management leads

to inefficiencies and can even be dangerous. Establishing a project management office can foster consistency and nurture project management professionalism.

2.2.3.2 Responsibilities of the Project Management Office

The Project Management Office according to Newton (2010, p.207) has one or more of the following responsibilities, which it has to carry out for any particular project being run by the organisation.

- Provision of administrative support to the project management team.
- Collection and aggregation of projects information such as weekly reports, time sheets and project resource requests.
- Development and maintenance of the project management infrastructure.
- The PMO owns the project management standards of the organisation.
- Analysis of project plans and other reports across projects to support cross-project issue, risk and dependency management.
- Provision of document control, library management and knowledge management across the project management community.
- The PMO is also charged with provision of specialist resources to be utilised when required. The specialist resources may include:
  - Project planner
  - Risk manager
  - Benefits manager, and
  - Portfolio manager

Dai et al. (2004, p.524) state that PMOs should also assume the responsibility for provisioning of project risk assessment and performing post-project evaluation

services. This will see them ultimately playing a leading role in organisational transition to an effective project environment. The PMO also serves as a depository for project reports on performance of planning, budgeting, scheduling and resource allocation processes. The PMO can therefore be termed the tie between strategic management and project managers.

2.2.3.3 Developing and Maintaining Project Management Standards & Methods

The Project Management Office is established to develop and maintain a set of project management standards and methods. This makes it a steward of documented project management expertise in the organisation. The standard procedures and methods should be detailed enough to provide guidance, but be flexible enough to allow creativity with the project managers (Dai et al., 2004, p.525). In recent times, and in modern organisations, project management standards are increasingly considered important building blocks. These building blocks are expected to assist in harmonizing divergent project management terminology and different understandings of processes and methods employed while implementing projects.

A wide variety of standards, offered by different organisational bodies, are currently available to assist in management of projects. These bodies include, but are not limited to international official standard giving organisations such as ISO and ANSI. There are also project management associations, as well as associations that promote industry specific standards the world over (Ahlemann, Teuteberg & Vogelsang, 2009, p.292). Further to that, choosing project management standards is a very complex task for organisations. The major challenge is that of identifying a standard that is:

- widely used among project partners and stakeholders so that a consensus can be established.
- applicable for the type of organization and the type of projects so that it can be implemented efficiently and
- unfolds real benefits for the organization so that it is effective.

Standards and methods for project management have become progressively more comparable in terms of structure and content despite many differences at the detailed level. The standards, according to Ahlemann et al. (2009, p294) may comprise the following:

- *Terminology*: One of the most fundamental tasks of project management standards is to harmonize project management terminology, allowing practitioners to communicate without (major) friction.
- *Functions*: Project management standards typically contain a functional decomposition of project management. This may be in the form of so-called knowledge areas or simply by presenting an outline that structures the field of project management in terms of its main tasks, such as resource management or cost management.
- *Process descriptions*: A functional decomposition of project tasks does not usually contain information about the meaningful sequence in which project management tasks should be carried out. Such a sequence is provided by process descriptions that frequently also define which inputs are necessary for certain process steps and what their outputs are.

- *Organizational models*: A growing number of standards contain organizational models for executing projects. E.g. organizational units such as project offices are introduced and project committees are defined.

Different project management methods that can be employed by organisations may include the following:

- PRINCE 2: PRojects IN Controlled Environments; widely recognised as the de facto for project management, PRINCE2 provides a framework that brings together disciplines and activities involved in successful project delivery.
- PMBOK & PMP: The PMBOK Guide is considered one of the most essential tools in the project management profession and is the de facto global standard for the industry. Project Management Professional (PMP) is an internationally recognised project management certification administered by the Project Management Institute (PMI).
- PRiSM (Projects integrating Sustainable Methods): process-based, structured project management methodology that highlights areas of sustainability and integrates them into four core project phases in order to maximize opportunities to improve sustainability and the use of finite resources. The methodology encompasses the management, control and organization of a project with consideration and emphasis beyond the project life-cycle and on the five aspects of sustainability.
- Critical Chain Project Management: a method of planning and managing project execution designed to deal with uncertainties inherent in managing projects, while taking into consideration limited availability of resources

(physical, human skills, as well as management & support capacity) needed to execute projects.

The PMO may choose any of the international available standards and methods. It may choose to adopt the standards as is or customise them to suit their organisation. Once developed, these standards and methods must be maintained regularly to ensure they remain relevant and applied across all projects of the organisation.

2.2.3.4 Providing Project Administrative Support

One of the responsibilities of the PMO is to act as a project support group. The support group develops methodologies, templates, training programs, standards and reviews processes to ensure there is consistency in the management of prcjects across the organisation. As organisational projects increase in numbers and scale, the associated administrative requirements also increase. Often administrative work is not reflected directly in project deliverables and can therefore represent a distraction to the core project team. As a result, project administrative support becomes necessary to provide a portfolio of services to support project teams which are responsible for specific portfolio of projects (Dai et al., 2004, p.225).

Wysocki (2011, p.485) identifies six service areas the PMO is responsible for providing administrative support on as follows:

- Project Support
- Consulting and mentoring
- Methods and standards
- Software tools

- Training
- Project managers

Wysocki (2011, p.486) states that even though he thinks the areas outlined above should be the services offered by a fully functional PMO, not all PMOs will offer all the six services. Deciding which services to offer rests fully with senior management.

2.2.4 Project Management Methodology

2.2.4.1 Definition of a Project Management Methodology

A project management methodology is a system of inter-related phases, procedures, activities and tasks that define the project process from the start through to completion. Each phase of the project produces a major deliverable that contributes towards achieving project objectives. Phasing of the project is also used to provide logical breaks in the project associated with key decision points. Phases consist of a number of activities that are groups of related tasks and, when viewed in isolation, give a clear indication of the logical sequence of steps to be taken to achieve either phase or project objectives. Each activity will have a number of tasks. Tasks are the lowest level shown in the breakdown and produce an outcome contributing towards major deliverables. A formal project management methodology would describe the activities and steps associated with each of the five phases: Initiate, Plan, Execute, Control and Close (Dinsmore & Cabanis-Brewin, 2010, p.466).

Weaver (2007, p.6) follows the evolution of various project management methodologies which gained popularity in the 1970s and 1980s. Every methodology

is described as consisting of process descriptions which are implemented by applying generic templates, forms and software. The project management methodology is owned by a Project Management Office which is responsible for rolling out projects using the methodology as a standard. The project management methodology may be internally devised or bought off the shelf. Office of Government Commerce (2005, p.1) stipulates the importance of adopting a robust project management methodology such as PRINCE2. Project failures arise due to a number of reasons. Lack of a valid business case for the project is one major factor. The business case is the justification for setting up and continuation of a project.

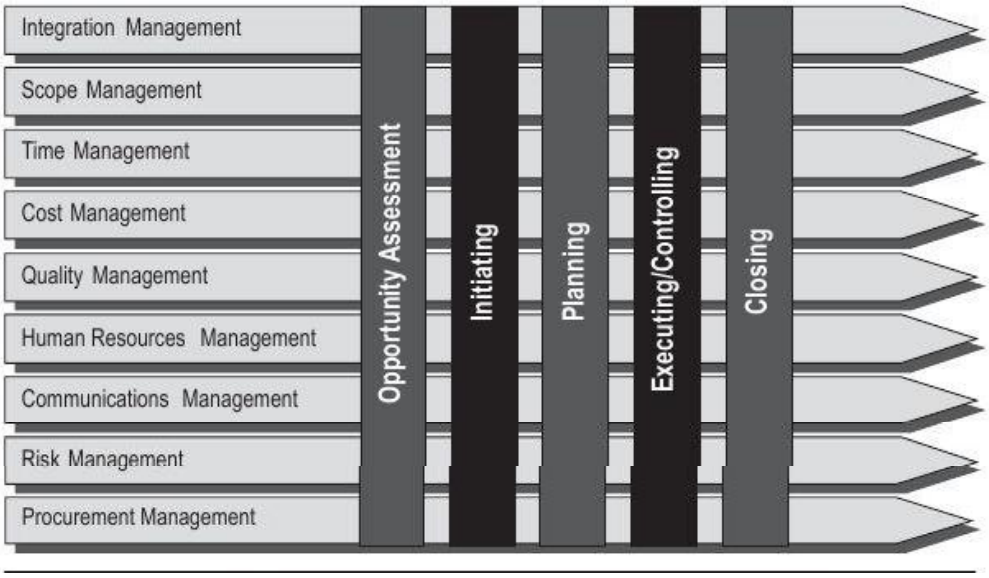
A robust project management methodology ensures that a business case is compiled and signed off by senior management prior to initiating a new project. Another major factor resulting in failure of projects is the lack of efficient communication with stakeholders. This results in products which do not match customer requirements. A good project management methodology outlines a communication plan which ensures regular communication with all relevant stakeholders as the project progresses. The benefits of a project management methodology are highlighted in Association for Project Management (2006, p.96) as follows.

Methods provide a consistent framework which allows for the effective execution of projects. Procedures comprise of individual aspects of project management practice and play a key role in the facilitation of the project management methodology. It is effective in providing a consistent approach to all projects within the business and provides a solid governance framework for project implementation. Project management methodology paves the way for continuous development of project

management processes through review of lessons learnt from previously launched projects. The methodology allows for a common understanding of roles and responsibilities within the project team.

The figure below depicts a typical project management methodology. It has been adopted from Dinsmore et al. (2010, p.467):

Figure 1- Typical Project Management Methodology: Adopted from The Ama Handbook of Project Management.



Source: (Dinsmore et al., 2010, p.467)

2.2.4.2 Benefits of a Project Management Methodology

A good and successfully implemented project stems from a well planned and executed project management methodology. Successful project management is characterised by good planning, effective scoping and resourcing, realistic expectations of project outcomes and strong management support. When a prcject becomes more complex, it

becomes more important to have rigor applied to its management through adoption of a project management methodology. A project management methodology affords organisations the benefits of organising work around projects and the critical need to communicate and coordinate work across departments and professions. These methodologies allow organisations and project managers to use standardised tools and techniques to measure project progress and track project tasks (Haughey, 2010).

According to Borysowich (2010), as projects are becoming increasingly complex, a good project management methodology would offer strategic, tactical and operational benefits to organisations. This will allow project managers to tackle such complex projects systematically, comprehensively and in an integrated manner for acceptable risk. A methodology is necessary in a strategic sense to provide confidence to customers, partners and senior management that the project manager can manage large projects and deliver them profitably. This is because it enables project managers to realistically assess any risks and difficulties that large projects encompass and put in place strategies needed to minimise and conquer such risks and difficulties. At a tactical level, a project management methodology allows managers to have confidence in the validity of status assessments. It ensures early recognition and correction of technical problems related to business requirements and to the business case.

Operationally, a project management methodology becomes the key means by which project managers empower their project teams to do right by the project, the right way, first time around. This is very crucial in enabling project managers to deliver cost-effective, scheduled-compressed solutions (Borysowich, 2010). Marks (2012,

p.3) identifies the following generic benefits of using a standardised project management methodology:

- Provision of a consistent approach to all projects within an organization.
- A scalable approach that can be used on both large and small projects.
- It increases the chances of successfully achieving objectives.
- It develops an environment to allow continuous development in project management processes.
- It develops common understanding of the various project roles and responsibilities (including stakeholders).

2.2.4.3 Choice of a Project Management Methodology

Different professional bodies exist to provide standards for project management worldwide. Some organisations may choose to adopt a set of global standards while others may choose to adopt the most popular standard for their region, typically IPMA in Europe and PMI outside Europe. Other organisations opt for the most popular standard for their sector (PRINCE2 is prevalent in government, finance and IT sectors). For this reason, Marks (2012, p.4) says there is no concrete advice on which methodology to follow. Instead organisations can select the most useful tools and techniques and a project life cycle around which they can be based.

The methodologies have to be assessed against the specific needs of the organisation and the project. He further states that no methodology is perfect. Each one has strengths and weaknesses and provides a well-defined route map for successful project management. Regardless of the methodology employed, what is most crucial is that careful consideration must be given to the overall project objectives, timelines,

and cost. Roles and responsibilities of all participants and stakeholders should also be considered (Marks, 2012, p3-4). The most popular methodologies to choose from may include PRINCE2, PMBOK, SWEBOK, CMMI, PRiSM, as well as the Traditional Approach to managing projects.

2.2.5 Organisational Culture

2.2.5.1 Definition of Organisational Culture

O'Sullivan (2007, p.140) defines organisational culture as *"a pattern of shared basic assumptions that the group learned as it solved its problems of external adaptation and internal integration that has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think and feel in relation to those problems."* He further states that individuals belonging to the same organisation (with exception of, perhaps, a dysfunctional one) could be expected to possess, to a certain degree, a common identity with other organisational members. They could also share an understanding of their organisational world. Kippenberger (2003, p.2) discusses the role organisational culture plays in implementation of successful projects, saying actions which result in project success develop into models that are then adopted by the organisation as an overall culture. This is achieved by repeating the product and service offering and ensuring that the systems, controls and structures which were responsible for achieving success become routine and can be easily followed by everyone within the organisation.

2.2.5.2 Impact of Culture on Organisations

Behaviour is included within some of the multiple definitions of the notion of organisational culture that have been offered by different writers. Some of these definitions are outlined in this paper, although other writers differentiated between culture and behaviour. Hoogervorst, van der Flier & Koopman (2004, p.293) allude that "*The 'behavioural approach' focuses on aspects such as rites and ceremonies, and fits the descriptive approach to culture, showing more attention for manifestations and addresses culture on the level of form. Culture is thus seen as something the organisation is.*" The 'cognitive approach' differentiates culture from behaviour, seeing culture as a collection of normative convictions that acts as guidance for behaviour. This view sees culture as something the organisation has. It refers to culture as basic values and beliefs resulting from learned responses of organisational members to environmental conditions and stimuli. Culture then arguably becomes a stable phenomenon that remains preserved even if organisational members change. Hoogervorst et al. (2004, p.293) observes that organisations have a cognitive system and memory. Individuals may come and go but organisations preserve knowledge, behaviours, mental maps, norms and values over time.

According to Forsyth (2012, p.65), the power of an organisation's culture is considerable. Culture is perhaps best defined as a combination of perceived best practice, the way we do things round here, and of commitment. It is perhaps difficult to define corporate culture, but it is something we all know when we meet it. It can easily be interpreted as the prevailing atmosphere at department level, as well as more widely. It is partly unspecific and manifests itself as 'good feelings' in a variety of ways. Organisational culture is also very specific. It can be very powerful and can

certainly influence reactions. It communicates how things ought to be done and defines the unwritten rules of the organisation. Organisational culture can however support or frustrate organisational goals. However, if the coin is flipped and culture is looked at as something that the organisation has, then it can be changed to allow the organisation to create a culture that supports employee commitment (Hoogervorst et al. 2004, p.293).

According to Shanks et al. (2000, p.2), organisational culture imposes rules, values and practices for the organisation and its employees. It has a substantial and definite influence on organisational behaviour and management of organisations. They state four elements proposed by Hofstede and use them to identify differences between organisations at cultural level. The elements are listed and briefly described below:

- Power Distance – used to indicate dependence relationships in a particular organisation. Some organisations have lower power distance with flatter organisational structures and less centralised authority and power. Others are more hierarchical with high power distance and more centralised authority.
- Individualism and Collectivism – collectivism is concerned with group interest rather than individual interest. Some organisations have individualistic culture, where employees are individualists. Others have employees who work as a collective.
- Uncertainty Avoidance – the extent to which members of a culture feel threatened by uncertain or unknown situations. Some organisations exhibit low uncertainty avoidance and generally accept risk taking as an integral part of business life. Other organisations would exhibit anxiety about ambiguous

situations and unfamiliar risks and therefore precision becomes very important.

- Masculinity and Femininity – the extent to which dominance is used and perceived in a society or organisation. In a more feminine organisation, managers generally use intuition as much as logical thinking to solve problems while masculine organisations have more aggressive managers where money and rationality dominate.

Shanks et al. (2000, p 2-3) used the above framework proposed by Hofstede and modified by Burn, Davison and Jordan to study how culture influenced project success in two organisations. The organisations studied were Elevatorco, a large elevator company in China and Oilco, a refiner and marketer of a broad range of petroleum products in Australia and eleven countries in the Pacific. Both organisations carried out projects to implement ERP solutions which were considered critical to the ongoing success of the companies.

The results of the study evidenced that culture is very crucial to successful implementation of projects. Even though the two organisations implemented similar solutions, their implementation strategies were very much influenced by the prevailing cultures within the organisations. Elevatorco had a very high power distance. Its employees worked as a collective and exhibited high anxiety about ambiguous situations and unfamiliar risks. They had a more feminine approach to business, with managers generally using intuition and logical thinking to solve problems. Oilco was the total opposite. This means they took their organisational cultures into consideration during planning and implementation of the projects. They

did not just take a one size fits all approach to implementation of the projects. This allowed both organisations to successfully implement their projects even though they remained in a stabilisation phase for a considerable amount of time (Shanks et al., 2000, p 2-7).

2.2.6 Impact of Risk Management on Project Success

2.2.6.1 Risk Defined

Hopkin (2012, p.13) quotes the Oxford English Dictionary defining risk as "*a chance or possibility of danger, loss, injury or other adverse consequences*". He further quotes the Institute of Internal Auditors (IIA) defining risk as "*the uncertainty of an event occurring that could have an impact on the achievement of objectives.*" The IIA adds that risk is measured in terms of consequences and likelihood. Risk is often defined in terms of uncertainty or deviation from the expected outcome. All projects seem to involve risk. The zero-risk project is not worth pursuing because acceptance of some risk is likely to yield more desirable and appropriate level of benefit in return of resources expended on the project.

De Bakker, Boonstra & Wortmann (2009, p.2) identify two approaches to risk management, evaluation approach and management approach. They write that the main aim of the risk management process is to list and quantify risks and identify causes for project failure. The process stipulates that:

- Known risk factors are the input for a project.
- The project risk management process collects information about the risks and failure of the project, which leads to new risk factors.

- These new factors are added to the list of known risk factors, together forming the input for the next project.

The evaluation approach to risk management aims at answering the question "what causes project failure?" The management approach to risk management on the other hand looks at answering the question "how to deal with risks in order to prevent a project from failing?" De Bakker et al. (2009, p.3).

2.2.6.2 Common Risk Types

According to Campbell & Baker (2011, p.88), types of risks encountered vary from project to project but ultimately all project risks will fall within either of the following risk types:

- The known risks – which are risk that can be identified after reviewing project definition within the context of the business. The project manager must draw on their experience and that of the stakeholders in defining risks of this nature.
- The predictable risks – These are anticipated risks based on work with similar projects which may occur. They have to do with things such as staff turnover or economic changes that can have an anticipated impact. Instinct, rather than concrete evidence, tells us to be wary of these risks.
- The unpredictable risks – These things that happen beyond the control of the project manager or project team. Project teams and managers simply cannot predict everything and so these unpredictable risks bring about additional requirements that project teams had no way of predicting.

2.2.6.3 Risk Focus Areas

Campbell et al. (2011, p.88-89) go on to say risks can be broken down into areas that may have an impact in delivery of the product or service. The fundamental ones include:

- Funding – Project managers may not get the full amount of funding that the project needs.
- Time - Things may take longer than originally planned. This therefore brings the risk of running out of time and missing schedule releases.
- Staffing - As work on the project begins, it might become difficult to find the right staff in the marketplace. The project manager might also experience unavailability of requisite experience or skills set to meet project objectives within the company.
- Customer/client relations - If the client does not have time to work with the project team to define requirements of the solution to project problems, there might be a risk of having a dissatisfied client as the project proceeds.
- Project size and/or complexity - The project might be so large or so complex that it taxes the project manager's ability to complete it on time or within budget. There are just too many factors to attempt to control, especially given the time or budget restrictions.
- Overall structure - Political decisions may force competing work groups to share responsibility for certain activities, potentially creating a situation where no one is assuming accountability for decisions required by the project manager.
- Organizational resistance – Even if the project makes business sense, key groups may resist the changes required by the project deliverables.

- External factors - External risk factors such as new government regulations or technological changes hover outside control of the project manager.

2.2.6.4 The Project Risk Management Process

Hopkin (2012, p.301) explains that there will be uncertainties related to events, conditions and circumstances within projects. These call for the requirements of project risk management meant to identify the events that could give rise to uncertainty and respond to such events appropriately. He explains that the style of risk management most relevant to project risk management is control management. Cervone (2006) asserts that understanding risk management entails understanding the underlying factors that contribute to project risks, saying that risks are often the same regardless of the nature of the project. The first step in risk assessment is risk identification, followed by risk analysis which is used to identify the likelihood the identified risks will happen. Several formal methods exist to assist in risk analysis. However, many project managers prefer some type of matrix-based decision process for analysing and evaluating project risk (Cervone, 2006).

Raz, Shenhar & Dvir (2002, p.102) inscribe that while project managers cannot avoid project risks (just as no one can avoid natural disasters), they can certainly prepare for risk by adding risk management activities to project plans. They could also put in place mechanisms, backups and extra resources which would protect the organisation in case something goes wrong. This added planning, identification and preparation for project risks is what makes up project risk management. Within the current view of prcject management as a life-cycle process, project risk management is seen as an encompassing process. It starts at project definition and continues thorough planning,

execution and control phases through to completion and closure of the project. The project risk management process is supported by tools and techniques such as checklists, brainstorming, prototyping, simulation and contingency planning. This is to ensure any exposure has been adequately catered for from beginning to end of the project. As much as there are different types of projects, there exist different project risk management practices with different tools and techniques. This addresses the need to adapt project management styles and practices to specific project types (Raz et al., 2002, p.102).

2.2.7 Effective Monitoring Scheme

2.2.7.1 What is Project Monitoring?

Project performance has to be monitored throughout all phases of the project management life-cycle. This involves determining whether the project is still on track, where schedules and budgets are concerned. The most obvious thing to monitor is progress in creating deliverables and other, intermediate, project products. Meeting milestones or deadlines should also be closely monitored. Difficulties however arise when you want to monitor progress and things are only partially complete. The simple answer is to break the products and deliverables into smaller components. The components could then be assessed as complete at shorter and more frequent intervals of time – for example, software could be broken down into smaller, relatively self-contained modules.

Monitoring also includes control of project costs, scheduling and time, purchasing and inventory, as well as quality throughout the entire project life-cycle process. Project

monitoring is usually conducted independent of the project team by business representatives, subject matter experts and project managers not involved in the project being monitored (Hughes, Ireland, West, Smith & Shepherd, 2012). Kendrick (2009, p.276) identify a four-stage project monitoring cycle which should be repeated periodically (generally weekly) throughout the project. He describes the monitoring cycle further with the first stage being that of inbound communication. This involves collection of project status information. The second stage of the cycle compares the status to the plan, evaluates the metrics and analyses any variances. The third stage responds to any problems or issues detected while the fourth and final stage of the cycle is outbound communication. This involves keeping people aware of what has happened in the project.

The monitoring process provides for analysis and planning after collection of project status information before project reporting can be done. It provides for inclusion of the project manager and project team's responses to any issues and problems in the project status report. This means that if there are any bad news reported, they can be received better since they would be accompanied by credible plans for recovery (Kendrick, 2009, p.276-277). Cleland & Ireland (2010, p.299) state that several conditions and understandings are required in order to properly assess project progress. These conditions include the following:

- Team members must understand and be committed to the importance of the process of project monitoring, evaluation, and control.
- Information derived from the Work Breakdown Structures is required to measure project progress.

- The work package is the basic project unit around which progress on the project can be measured and evaluated.
- Information used for project control purposes must be relevant, timely, and amenable to the plotting of trends in the use of project resources.
- Measurement of project results must start with an evaluation of the status of all of the work packages on the project.
- Information collected and compiled concerning the status of the project must be tempered by the judgment of the project team members and executives concerned.

According to Kendrick (2009, p.274), monitoring your project can commence as soon as there is a clear, validated baseline plan that has been approved by the project sponsor and accepted by the project leader and team. For project monitoring to work effectively, there should be a functioning communications infrastructure and tracking methods. Information should be made available to all team members and stakeholders throughout the project planning process.

2.2.7.2 Project Monitoring Tools

Heldman (2011, p.253) lists several techniques which are available for use to track project outcomes. The techniques include the following:

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- *Status Review Meetings - Project status meetings allow you to collect information from the project team members regarding progress of project tasks.*

- *Variance Analysis - This technique compares the expected project plan results with the actual results to determine whether variances exist. You'll use this technique primarily to determine schedule variances, buaget variances, and quality variances. Variance analysis can be used for risks, scope, and performance specification measurements as well.*
- *Trend Analysis - Trend analysis involves analyzing project results periodically to determine whether the project performance is improving or getting worse. Mathematical formulas are used in this technique to forecast project outcomes based on historical information.*
- *Earned Value Analysis - Earned value analysis is the technique used most often to determine project performance. Earned value is unique because it calculates cost, schedule, and scope measurements together to determine various indexes, performance measures, and variances. Several formulas and measurements are used in this technique to determine the forecasted costs of the project at completion, the actual costs of the project to date versus what was budgeted, schedule variances, performance indexes, and so on.*
- *Inspection - Inspection is most often used in quality control. This involves physically looking at the results and measuring them or testing them to determine whether the results meet the requirements or quality standards outlined in the plan.*
- *Control Charts - Control charts are used to measure and plot the results of processes over time. You can measure and display variances, track measurements, compare variables, and so on. There are several forms of control charts, including variance control charts, flowcharts, Pareto diagrams, scatter diagrams, and numerous industry specific controls."*

Al-Jibouri (2003, p.145) states that there are a number of monitoring systems used to traditionally monitor project progress. Some of the systems rely on information related to activities while others are based on work types. Although all of these systems are used to produce measures of project performance, financially or otherwise, the basis of measurement used, and its interpretation of work performance are different in each of them. Therefore, it is expected that, for any particular real situation, some of these systems will produce measures that may call for control action while others may fail to do so. He focuses on and investigates three of these monitoring systems namely:

- Leading parameter Technique
- Variances Method
- Activity Based Ratios Technique

After carrying out several experiments to test the effectiveness of the above monitoring systems, comparisons indicated that different systems are suitable for different situations. Some techniques are simpler and easier to interpret than others. It also became evident that effectiveness of the monitoring systems in showing deviations of project performance varies substantially from one system to another. He also found out that Activity Based Ratio Technique gives a simpler and clearer indication of the overall project progress than the other two systems.

2.2.8 Adequate Project Evaluation Process

2.2.8.1 Project Evaluation Defined

Project evaluation is the process of attempting to determine whether the overall status of project work is acceptable in comparison to intended value to the client once the work has been completed and the project is launched (Heagney, 2011, p.120). This process appraises progress and performance of the project against project baseline plans. It also provides management with information on which decisions to proceed with the project can be based on. Mantel, Meredith, Shafer & Sutton (2010, p.272-273) describe project evaluation as a process that appraises progress and performance relative to the project's baseline or revised plan.

Mantel et al. (2010, p.272-273) go on to say that the primary purpose of project evaluation is to give feedback to senior management for decision making and control purposes. Therefore, project evaluation should not be limited to a simple after-the-fact analysis. The evaluation should rather be conducted at a number of crucial points during the project life-cycle. It is therefore very important for the evaluation to have credibility in the eyes of both senior management and the entire project team. Marchewka (2012, p.428) identifies four types of project evaluation which are supposed to be conducted. These include "*an individual review of each team member's performance, a post-mortem review by the project manager and the project team, an audit of the project by an objective and respected outside party and an evaluation sometime after the project is implemented to determine whether the project achieved its envisioned measurable organisational value.*" In order for project evaluation to be successful, the measurable organisational value is defined at the beginning of the project.

2.2.8.2 Project Evaluation Criteria

Mantel et al. (2010, p.273) declares that different measures can be applied in project evaluation. Senior management may have their particular areas of interest where project evaluation is concerned. This is for future planning and decision making. While doing evaluation, the original criteria for selecting and funding the project should be considered. Also important is any special reasons for selection of that particular project. The extent to which the project is progressing on such criteria should be an important part of the evaluation as well. One of the major criteria of evaluation should be the project's apparent success to date.

Mantel et al. (2010, p.274) identifies four important dimensions of project success. The first dimension is the project's efficiency in meeting the budget and schedule. Since efficiency does not necessarily translate into performance or effectiveness, the second dimension becomes that of customer impact/satisfaction. This is the most complex dimension. It includes not only meeting the formal technical and operational specifications of the project, but also the less tangible aspects of fulfilling the client's needs and whether the client actually ends up using the project results. This becomes the perennial challenge of customer satisfaction. The third dimension is direct business success. This includes factors such as the level of commercial success and market share for external projects. The achievement of the project's goal such as improved yields or reduced throughput time for internal projects also forms part of this dimension. The fourth and final dimension is future potential. This includes for example, establishing a presence in a new market, developing new technology etc.

This is the most difficult dimension to assess. The outlined criterion is usually sufficient for purely routine projects. For non-routine projects, two other criteria should be applied. The project's contribution to the organisation's unstated goals and objectives and the project's contribution to the objectives of project team members. In order to recognise the project's contribution, all facets of the project must be considered. This will allow for identification and understanding of the project's strengths and weaknesses. The evaluation report produced after completion of the evaluation process should include findings regarding the two criteria as well as some recommendations (Mantel et al., 2010, p.273-274).

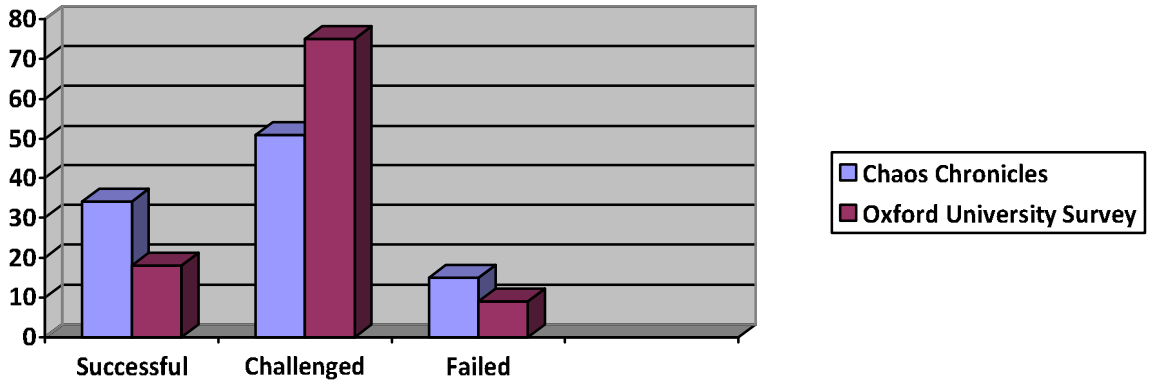
2.3 Statistics on Private versus Public Sector Project Success Rate

There is an increasing focus on the quality of project management within both public and private sector organisations. There is also an increasing experienced and qualified pool of project managers to choose from. The question still remains though, why do a significant proportion of projects continue to fail (Lewis, 2008)? Parliamentary Office of Science and Technology (2003) add that while public sector project delivery undoubtedly has difficulties, the track record of the private sector is not unblemished. This, they borrow from the report published by Standish Group in 2003, which considered 13,522 IT projects. The results are given in the graph on the next page.

The study shows that only a third of the projects were successful. Although there had been substantial improvements since the group's first research in 1994, nearly 70% of projects were challenged or failed completely. On average, cost overruns were 43%, time overruns 82% and only half of the required features and functions made it to the final product. As a result of the above figures, the Standish Group suggests that, in

2002, the US wasted $55 billion in cancelled and over-run IT projects, compared with a total IT spend of $255 billion. The graph combines the results of a survey by Oxford University and Computer Weekly with that of Standish Group. According to the data presented, about one in ten IT projects was abandoned, three quarters were challenged and around 15% succeeded. The results are similar for both private and public sectors. The data is presented in percentages.

Figure 2 – Success of IT Projects: 2003



Sources: Chaos Chronicles 2003, Standish Group

Oxford University: Computer Weekly Study of IT Project Management

2.4 Differences between the Private and Public Sectors

Researchers and subject matter experts have previously suggested substantive differences between public and private sector management of projects. In regard to software project management and related acquisitions, Elder & Garman (2008) note that public sector requires a protracted period of testing and prototype development. Strong accountability is necessary because government projects are open to public scrutiny. Private sector organisations on the other hand evaluate projects by the

economic efficiency of their performance. Public sector projects are strongly influenced by procedural equity such as acquisition regulations and government contracting rules. Elder et al. (2008) further state that the differences probably come from the different organisational cultures and environments.

Parliamentary Office of Science and Technology (2003) adds to the above notion, comparing successful private sector projects with public sector projects. The table below summarises their conclusions. While the figures for success and failure across the two sectors may perhaps be comparable, some argue that government is publicly funded, so it should aim for higher rates of success than the private sector.

Table 1- Differences between Private and Public Sector Projects

Successful Private Sector Projects	**Successful Public Sector Projects**
Focussed on measurable financial and service outcomes.	Have multiple aims, so hard to measure success.
Business driven by competition.	Generally not in competition with other projects.
Often not visible to the public or shareholders.	Highly visible to the public and the media.
Less constrained by legislation and regulations.	Constrained by UK and EU legislation.
Open to risk taking.	Managed in a risk adverse culture.
Designed to limit damage when they are in difficulty.	Difficult to adapt to change because of scale and complexity.
	Likely to interact with other departments.

Source: Getting IT Right for Government, Intellect (formerly the Computing Services and Software Association), 2000.

Some of the main differences stated on the table above are being considered further as follows.

2.4.1 Accountability

Organisations in the private sector are accountable mainly to shareholders, who may not even be aware of the existence of a project in the first place. In contrast, the public sector has more open methods of accountability, such as reporting to the National Audit Office and the Public Accounts Committee. This need for public accountability has been suggested to lead to a risk adverse culture in government. This culture of blame on the public sector should be replaced with a culture of blame avoidance with reporting done as much on success as it is on failure. Organs such as the National Audit Office however argue that they already support well managed risk taking intended to result in tangible benefits for taxpayers (Parliamentary Office of Science and Technology, 2003).

In a public sector context, a lot is said about issues relating to service delivery. The South African public sector faces daily criticism about its perceived inability to render effective services. It is criticised for its inability to complete developmental programmes according to plan, and in such a way that its citizens are of the opinion that they derive value for their tax revenue (van Rooyen, 2013). Van Rooyen (2013) further states that it should be noted that different sectors have different requirements as far as reporting information is concerned. Many factors naturally dictate what such reporting documents should inform upon. Elements such as project type, duration, approach, different levels and types of audiences play a role in the design of reporting documents. Many documents are designed to provide information on the status of the projects on the basis of who (management level and audience type - internal or external) should receive the information. When accountability exists, internal mechanisms scrutinize government spending and achievements. People are able to

make their voices heard and demand better performance from government (Stiles, 2010). Stiles (2010) further states that fostering accountability is complex, adaptive and evolutionary. It requires due diligence, planning, and careful implementation. While there are common denominators and issues to be addressed, there is no one solution that can simply be applied regardless of organisational realities. Helping stakeholders move from goals to reality is a challenging task with no one-size-fits-all formula. In the spirit of mutual accountability, all stakeholders must be prepared to ask tough questions, with the ultimate goal of moving from discussion to action, where all parties benefit and goals are achieved.

2.4.2 Publicity

Government programmes may be announced early and often leading to a build-up of expectations which may not be met. Ministers have been particularly criticised for announcing initiatives before considering the full delivery implications. In the private sector, projects may remain unannounced until they are ready for delivery, with the result that failed or cancelled projects do not attract such media attention (Parliamentary Office of Science and Technology, 2003). Smail (2007) declares that all managing authorities have a duty to conduct publicity and information campaigns during the life cycle of a project. This is deemed vital for engaging the maximum number of stakeholders during the implementation process and increasing the impact of the project. The general public must be informed of the overall objectives of the project and provided with appropriate messages and images of the benefits being brought by the initiatives.

Publicity activity can also stimulate political support and increase sustainability of projects and programmes. For public sector projects, it is imperative that they get publicity right in order to attract participants and economic actors to the project. Producing and following a communications plan is not only important for private sector projects, it is as important for public sector projects and can be made easier by engaging public relations companies to assist with the process (Smail, 2007).

2.4.3 The Political Environment

The public sector has a tendency of altering policies rapidly, which may result in IT changes. As a result of the alterations, the initial project requirements may become obsolete before the project has even started. There is also a danger of the relevant legislation not passing through Parliament until just before implementation. This may also result in significant last-minute changes to project requirements. The above factors may both require contracts with suppliers which include flexible mechanisms for changing requirements. Such changes may likely make systems more complicated, blur agreements with providers and bloat budgets (Parliamentary Office of Science and Technology, 2003).

The key reality to the private sector is market-driven competition, whereas the same in the public sector is almost always a legislated monopoly. Private sector managers worry about creating added value, i.e. a product or service that can be sold competitively to the public. This requires the ability and skill to change, evolve, adapt and improve constantly. The public sector is frequently quite different, managers in the public sector often know what needs to be done and desire to do it but are facing restrictions of laws, regulations, policies, often made years earlier for other

circumstances, that prevent prompt action. Also in the public sector authority may be ambiguous and unclear in some circumstances.

In other cases, it is very clear and tightly restricted through laws, regulations, policies and directives that leave little, if any room for individual initiative. Political appointees know that their job tenure is very finite, so they frequently spend a disproportionate amount of time considering or working towards their next private sector activity, completely ignoring projects at hand. This distraction, with its implications for the performance of the individual and those organisationally above or below the individual, does not occur in the private sector (Mares, 2013).

2.5 Reliability of the Data Collection Instrument (Questionnaire)

Kuen et al. (2009, p.19) states that "a questionnaire is a popular method of collecting data because researchers can gather information fairly easily and the questionnaire responses are easily coded". A questionnaire allows each person or respondent to respond to the same set of questions. This provides an efficient way of collecting responses from a large sample prior to quantitative analysis (Saunders, Lewis & Thornhill, 2009, p.360). It is not easy to produce a questionnaire than most people think, the questionnaire should be able to collect the precise data that is required to answer research questions and achieve research objectives (Saunders et al, 2009, p.361).

2.5.1 Testing for Reliability

Reliability refers to consistency of a questionnaire. It is concerned with the robustness of the questionnaire, particularly whether or not it will produce consistent findings at different times and under different conditions. This might be with different samples or, in the case of an interviewer-administered questionnaire, with different interviewers (Saunders et al., 2009, p.373). Three common approaches to testing reliability exist. They should be considered at the questionnaire design stage. These include:

- Test re-test
- Internal consistency
- Alternative form

According to Saunders et al. (2009, p.373), test re-test estimates of reliability are obtained by correlating data collected with data from the same questionnaire. All data compared should be collected under as near equivalent conditions as possible. This will therefore bring need for the questionnaire to be administered twice to respondents. As it is not easy to persuade respondents of a questionnaire twice, this method would prove very difficult.

Internal Consistency measures consistency of responses across either all the questions or a sub-group of questions from the questionnaire. A commonly used method for this purpose is Cronbach's alpha. Alternative form offers some sense of the reliability within the questionnaire through comparing responses to alternative forms of the same question or groups of questions. This brings about difficulty in ensuring that the questions are substantially equivalent (Saunders et al., 2009, p.374). Hague, Hague &

Morgan (2013) emphasise that the questionnaire should at least be piloted before carrying out the actual survey. The pilot should, as far as possible, be carried out in the same conditions as the proper survey. That is, a telephone interview should be tested over the phone. An online questionnaire should be thoroughly tested by the researcher and dummy respondents before it is fully launched.

There is often no time to carry out a proper pilot but at the very least, the questionnaire should be tried on someone in the office, preferably someone not involved in the survey. Someone who was not involved in the design of the questionnaire should play the role of an interviewer while the questionnaire designer looks on. The person in charge of analysis of the questionnaire should also be allowed the opportunity to sign it off before it goes into the field, as he/she may well spot coding or routing problems (Hague et al., 2013).

2.6 Conclusion

This chapter presented a review of literature on what other scholars have written about the different factors impacting successful implementation of projects. It investigated whether the identified factors influence projects in a similar manner in private and public sectors and whether there is any significant difference between the private and public sector regarding importance of the factors influencing project success. The chapter also looked at testing reliability of the data collection instrument in establishing if it is reliable enough to collect meaningful data. Factors impacting project success have been identified as including the following:

- Senior Management Involvement
- Project Management Office

- Project Management Methodology
- Organisational Culture
- Project Risk Management
- Effective Monitoring and Evaluation

Statistics were gathered to ascertain if the factors influence project success in a similar fashion in both private and public sector. Literature was also gathered to find out if both sectors place the same weight of importance on the factors. The findings of the literature review were later in the study compared to the results of the survey to determine any discrepancies.

CHAPTER 3

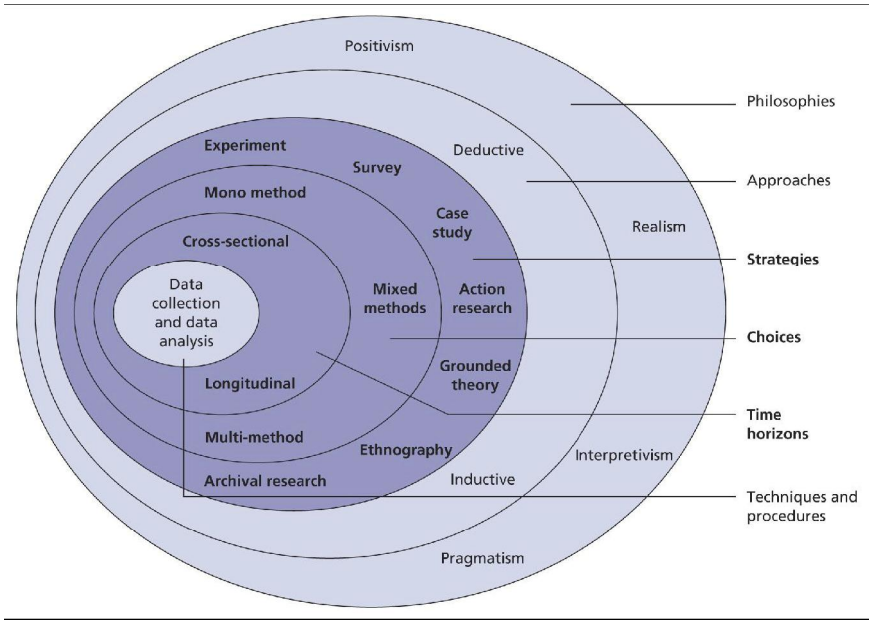
3 RESEARCH METHODOLOGY

3.1 Introduction

The purpose of this research study was to investigate and gain insight into the main factors impacting successful implementation of projects in financial institutions and government departments in Botswana. The study then analysed the factors to ascertain if they influence project implementation success in a similar fashion in both private and public sectors. It went on to check the significance in difference of importance placed on the success factors by both sectors. Finally, it tested the reliability of the questionnaire used to collect data. The research study was restricted to the greater Gaborone area. This chapter outlines the research philosophy, research approach and strategy and data collection method. It also touches on the data analysis techniques employed by the study.

The preferred method for this research is the onion method illustrated by Saunders et al. (2009). The method is simple to understand, employing logical phases that are easy to follow. The method also brings about a detailed clarification of research philosophies, research approaches, research strategies, and time horizons and data collection methods. Figure 2 below illustrates a graphical presentation of the onion from Saunders et al. (2009, p.108).

Figure 3 – The Research Onion: Adopted from Research Methods for Business Students.



Source: Saunders et al. (2009, p.108)

3.2 Research Philosophy

Saunders et al. (2009, p.107) describe research philosophy as an over-arching term relating to development of knowledge and the nature of that knowledge. Even if the purpose of developing this knowledge has the relatively modest ambition of answering a specific problem in a particular organisation or industry, it is still seen as developing new knowledge. Developing a philosophical perspective requires that the researcher make several core assumptions concerning two dimensions: the nature of society and the nature of science (Holden & Lynch, 2004, p.3).

Several views about the research process exist, Saunders et al. (2009, p.108) present four of these views namely positivism, realism, interpretivism and pragmatism. They

further state that the research philosophy adopted by a researcher contains important assumptions about the way in which the researcher views the world. This study adopted interpretivism research philosophy because it deals with the way humans make sense of the world around them. Interpretivism advocates that it is necessary for a researcher to understand the difference between humans in our role as social actors. This emphasizes the difference between conducting research among people rather than objects (Saunders et al., 2009, p.116).

Crucial to the interpretivist philosophy is that the researcher has to adopt an empathetic stance. The challenge here is to enter the social world of our research subjects and understand their world from their point of view. Some would argue that an interpretivist perspective is highly appropriate in the case of business and management research, particularly in such fields as organisational behaviour, marketing and human resource management. Not only are business situations complex, they are also unique. They are a function of a particular set of circumstances and individuals coming together at a specific time (Saunders et al., 2009, p.116). This cannot be more true or relevant to this research as project managers come together with their project teams at a specific time to implement and deliver projects according to set conditions.

3.3 Research Approach and Design

Saunders et al. (2009, p.124) assert that the extent to which a researcher is clear about the theory at the beginning of the research raises an important question concerning the design of the research project. This is to decide if the research should use the deductive approach, in which the researcher develops a theory and hypotheses and

design a research strategy to test the hypothesis, or if the researcher should use the inductive approach. This is where the researcher would collect data and develop a theory as a result of data analysis. As useful as it is to attach these research approaches to the different research philosophies, deduction is believed to owe more to positivism whereas induction owes to interpretivism. On the contrary, it is believed that such labelling is potentially misleading and of no real practical value.

This study adopted the inductive approach, where theory was developed from data obtained from the questionnaire.

3.4 Research Strategy

After identifying a research problem and completing the literature review, a research strategy is developed. A research strategy is a plan by which the specific activities of the research can be conducted and brought to successful closure (Wiersma, 2005). What is most important is whether the strategy chosen will enable the researcher to answer the research questions and meet the objectives. The choice of the research strategy is usually guided by research questions and objectives. The extent of existing knowledge, the amount of time and other resources available, including the researcher's own philosophical underpinnings are also important to consider when formulating a research strategy. Strategies should not be thought of as being mutually exclusive. For example, it is quite possible to use the survey strategy as part of a case study (Saunders et al., 2009, p.141).

Different research strategies exist to choose from. These include experiment, survey, case study, action research, grounded theory, ethnography and archival research. This

study employed a survey because it allows the collection of high amount of data from a sizeable population at lower costs.

3.5 Time Horizon

Time horizon deals with the amount of time taken for a particular research. A research may involve a "snapshot" taken at a particular time or a series of "snapshots" which would be represented over a given period of time. These explain two time horizons to research design which a researcher can choose from. The "snapshot" time horizon is referred to as cross-sectional studies while the series of "snapshots" or the "diary" perspective is known as longitudinal studies (Saunders et al., 2009, p.155).

This study adopted the cross-sectional studies time horizon because being an academic research project, the study is time constrained. It also employs a survey strategy which is said to be best suited for this time horizon.

3.6 Data Collection Method

The survey approach can employ a range of methods to answer the research questions. The method used in this survey is a questionnaire. Kuen et al. (2009, p.19) states that "a questionnaire is a popular method of collecting data because researchers can gather information fairly easily and the questionnaire responses are easily coded". The questions contained in the questionnaire were formulated using project success factors identified during literature review. The questionnaire was divided into two sections. The first section focused on questions on possible reasons for project success, whereas the second section collected data on demographics of the respondent. The

respondents were asked to rate the importance of a reason on the success of a project and also afforded an opportunity to answer open ended questions providing their opinions on what constitutes project success. Most of the respondents left the open ended questions unanswered.

Each closed ended question within the questionnaire was rated using a five point likert scale, with 1 representing strongly disagree and 5 strongly agree. A total of 100 questionnaires were distributed using two main channels. The channels employed included drop and collect as well as sending the questionnaires through email where necessary. 81% of the questionnaires were completed and collected back from the respondents.

3.7 Sampling

Sampling is defined as the selection of a fraction of the total number of units of interests to the decision makers. This is for the ultimate purpose of being able to draw general conclusions about the entire population (Fink, 2005). Sampling is efficient and precise when it comes to data collection. Samples can be studied more quickly than target populations and they are also less expensive to assemble. Sampling is efficient because resources which might go into collecting data on an unnecessarily large number of individuals or groups can be spent on other activities like monitoring the quality of data collection (Fink, 2005).

When combined with a standardized questionnaire, a sample offers the possibility of making refined descriptive assertions about a group in a given population. A sample could also be considered more representative because bias is avoided and also,

probability theory permits estimation of the sufficiency and representativeness of the sample. This also allows for estimation of sample error if it is desired (Wang, 2013). The study selected a sample made up of only financial institutions and government departments. Thus the questionnaires targeted a group of project managers, project resources and senior managers of organisations within Botswana which fall within these two sectors. This was selected from a population of project personnel across all industries. The organisations surveyed had implemented at least one project in the past five years. The Human Resource and/or Corporate Affairs departments of each targeted organisation were approached, using a formal signed letter by the research supervisor, seeking permission to carry out research and drop off questionnaires within the organisation.

3.8 Data Analysis

Data analysis is the stage of the study where the researcher will reduce the collected data into themes and categories by manipulating, ordering, categorizing, interpreting and summarizing data to facilitate interpretation as well as obtain answers to the research questions (Yates, 2004, p.55). Data analysis refers to a set of methods which are employed to interpret data and convert it into useful and required information. It can take the form of simple descriptive statistics or more complex and sophisticated statistical inference. It is very important for the researcher to do effective data analysis because this is the most important task to carry out in order to accomplish the research objectives. The research study adopted a quantitative data analysis technique, which was mainly through the use of the Statistical Package for Social Sciences (SPSS) tool.

To address the research objectives, factors identified during literature review were analysed to determine which of those were seen to influence success of projects the most in Botswana. This was achieved by using Factor Analysis on the Statistical Package for Social Sciences (SPSS) tool. The factors were grouped into themes and arranged in ascending order of importance. This was done for both sectors combined then separated according to sector to determine differences if any. Further investigation was then carried out to determine if there was any significant difference between public and private sectors regarding critical factors positively influencing project success. This was achieved by employing the t-test statistics within SPSS. Lastly Cronbach's alpha was employed to test reliability of the questionnaire to establish if it was reliable enough to produce any meaningful results.

3.9 Pilot Survey

A pilot survey was carried out to test clarity of instructions and items as well as reliability, relevance and validity of the questionnaire. It was meant to pre-test or try out the questionnaire prior to commencement of the actual survey. A maximum of 10 questionnaires were handed to project managers and senior managers and 8 responses were received and used to revise the questionnaire to make it easier to complete and ensure it is manageable. The respondents were asked to take part in the pilot study only if they had been actively involved in the running and implementation of a project and to base their responses on a most recently concluded project. The pilot survey was anonymous and this was meant to maximise chances of obtaining responses to sensitive questions.

3.9.1 Pilot Survey Results

Respondents of the pilot study confirmed that the questionnaire was easy to complete as the questions were self explanatory. They however suggested re-arrangement of the likert scale such that it ascends from 1 through to 5 instead of descending from 5 to 1. The pilot study also revealed that the questionnaire could be completed within a reasonable amount of time which gave assurance that it would be feasible to collect data using the questionnaire without scaring off potential respondents. The final questionnaire consisted of 2 sections, with section 1 comprising of questions on the factors identified during literature review and explored the following:

- Senior management involvement.
- Project management office.
- Project management methodology.
- Organisational Culture.
- Project risk management.
- Project monitoring and evaluation.

Section 2 of the questionnaire consisted of questions aimed at collecting demographic information about the respondents.

3.10 Conclusion

This chapter focused on outlining the research methodology employed by the study. It outlined the research philosophy, research approach and strategy and data collection method. It also touched on the data analysis techniques employed by the study. The research philosophy adopted by the study is interpretivism, employing an inductive research approach while the research strategy chosen is a survey. The study adopted a

cross-sectional time horizon which often employs a survey research strategy. The data collection method chosen is a questionnaire with a sample of project personnel from financial and government departments. Quantitative data analysis technique was applied to analyse data using SPSS.

CHAPTER 4

4 DATA ANALYSIS

4.1 Introduction

This chapter focused on analysis of data derived from views of the respondents. The data was arranged into tables and pictorial graphs with section 4.2.1 presenting section 2 of the questionnaire which collected data on the demographics of the respondents and the remaining sections of chapter 4 presenting the views of the respondents regarding influence of the identified factors on successful implementation of projects in different organisations in Botswana. The different factors were covered by section 1 of the questionnaire.

To address the research objectives, factors identified during literature review were analysed to determine which of those were seen to influence success of projects the most in Botswana. This was achieved by using Factor Analysis on the Statistical Package for Social Sciences (SPSS) tool. The factors were grouped into themes and arranged in ascending order of importance. This was done for both sectors combined, and then separated according to sector to determine differences if any. Factor Analysis attempts to identify underlying variables or factors that explain the pattern of correlations within a set of observed variables. It is often used in data reduction to identify a small number of factors that explain most of the variance observed in a much larger number of manifest variables. It is frequently used to develop questionnaires because in order to measure an ability or trait, the questions asked must relate to the construct intended to be measured (Field, 2005).

Further investigation was then carried out to determine if there was any significant difference between public and private sectors regarding critical factors positively influencing project success. This was achieved by employing statistical t-tests availed by the SPSS tool. The t-test is used for testing differences between two means. In order to use a t-test, the same variable must be measured in different groups, at different times, or in comparison to a known population mean. A t-test for independent groups is useful when the same variable has been measured in two independent groups and the researcher wants to know whether the difference between group means is statistically significant (Wielkiewicz, 2000).

Lastly Cronbach's alpha was employed to test reliability of the questionnaire to establish if it was reliable enough to produce any meaningful results. The rule of thumb for Cronbach's alpha coefficient value is presented below by Hair, Babin, Money & Samouel (2003).

Alpha Coefficient Range Strength of Association
Less than 0.60 - Poor
0.60 to less than 0.70 - Moderate
0.70 to less than 0.80 - Good
0.80 to less than 0.90 - Very good
0.90 and above – Excellent

Tavakol & Dennick state that Cronbach's alpha is used to provide a measure of internal consistency of a test or scale and that it is expressed as a number between 0 and 1. Internal consistency describes the extent to which all the items in a test measure the same concept or construct. It is therefore connected to the inter-relatedness of the items within the test.

The data used for analysis was derived from responses of 81 questionnaire respondents.

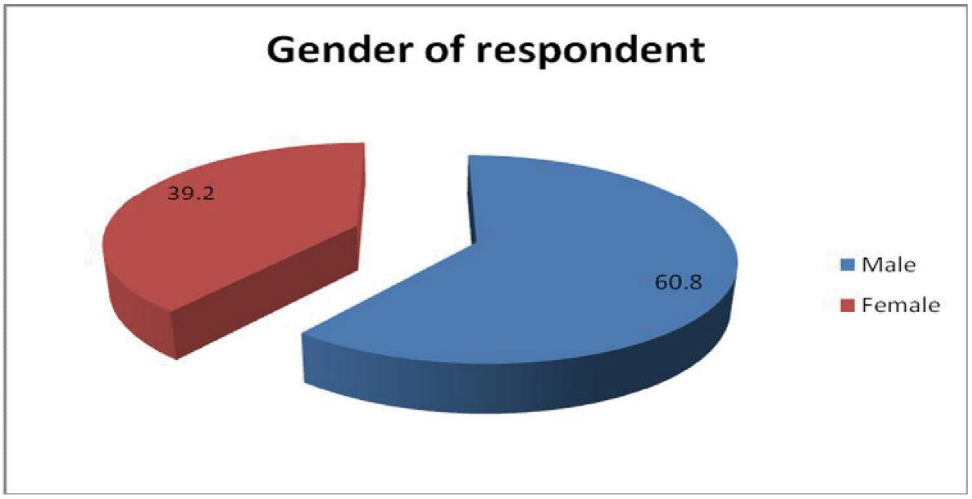
4.2 Survey Results

The following sections present the findings of data analysis presented in the form of tables, bar and pie charts with a brief description of the representation beneath each table or chart.

4.2.1 Descriptive Statistics

This section presents demographic information about the survey respondents. It focuses on gender, age, level of education and sector represented by the respondent.

Figure 4 - Percentage of Different Gender Groups



The above pie chart shows that the sample survey comprised of 60.8% male respondents while only 39.2% were female.

Table 2 - Age of Respondents

Age	Frequency	Percent
18-25	7	8.8
26-35	34	42.5
More than 35	39	48.8
Total	**80**	**100.0**

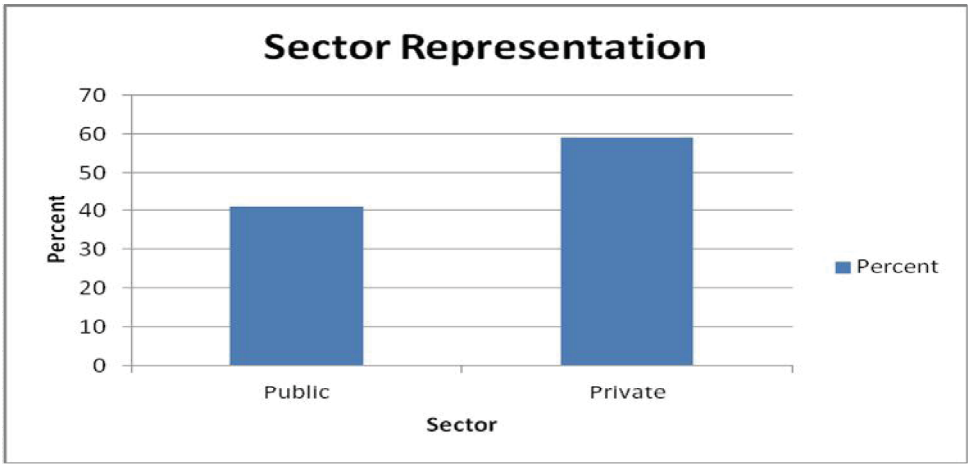
Table 2 above shows that 48.8% of the respondents in the survey were over 35 years of age while only 8.8% were between the ages of 18 and 25.

Table 3 - Highest Level of Education

Level of Education	Frequency	Percent
Diploma	8	10.4
Bachelor's Degree	51	66.2
Master's Degree	15	19.5
Other	3	3.9

A high number of respondents in the sample had attained a Bachelor's degree represented by 66.2% of the sample size, followed by those who attained Master's Degree at 19.5% of the sample, while Diploma holders were at 10.4%. 3.8% of the respondents had other qualifications which do not fall under the categories Diploma, Bachelors and Masters Degrees.

Figure 5 - Sector Representation



The bar chart shows that most of the respondents were from the private sector which represented 57.5% of the respondents while 42.5% of the respondents were from the public sector.

Table 4 - Years of Project Experience

Years of Experience	**Frequency**	**Percent**
Less than 5 years	45	57.0
6-10 years	20	25.3
11-15years	6	7.6
More than 15 years	8	10.1
Total	**79**	**100.0**

The table shows that more than half of the respondents had been working with projects for a period less than 5 years which represents 57% of the sample size while those who had worked with projects for 11-15 years represented only 7.6% of the sample population.

4.2.2 Project Success Factor Analysis

This section focused on analysis of factors influencing project success using statistical Factor Analysis. The intention was to assess all factors identified from literature review, and used to formulate the questionnaire, to determine which of those factors influence project success the most. The analysis also endeavoured to determine if project success influence by these factors differs across sectors. It is important to point out that a variable that indicates success of a project was not included in the questionnaire deeming regression method impossible. As a result Factor Analysis was used to give insight into which variables generally explain the success of a project.

Table 5 - Factor Analysis Results

Combined (Both Private and Public Sector)			
Component	**Total**	**Percentage of Variance**	**Cumulative Percentage**
1	5.428	18.718	18.718
2	4.716	16.262	34.980
3	4.066	14.020	49.000
4	3.785	13.052	62.052
5	3.644	12.566	74.619
Public			
1	7.25	24.99	24.99
2	6.91	23.82	48.82
3	5.71	19.70	68.51
4	3.87	13.34	81.86
Private			
1	5.42	18.70	18.70
2	4.92	16.96	35.65
3	3.99	13.75	49.40
4	2.84	9.79	59.19
5	2.41	8.30	67.49
6	1.54	5.32	72.81
7	4.96	4.96	77.77

The above table presents factors which influence the success of a project for both aggregated and individual sectors. It became evident that out of the possible 29 factors, only 5 factors explain about 75% variation while the rest share the remaining 25% when public and private sectors are aggregated. When analysing the public sector as a standalone, it became evident that project success was best explained by four factors which contribute 81%, while seven factors were found to contribute about 75% of variation to project success for the private sector.

The next step was to establish and identify what these individual factors were made up of. This grouped together related questions from the questionnaire into one theme to make up a factor. Table 6 presents the results from the aggregated factor analysis while differences in sectors are only discussed later. The table lists the factors in

ascending order of importance (based on their percentage of variance explained) and their components, with factor 1 being the most important and 5 the least important.

Table 6 - Factors and their Corresponding Components

FACTOR	COMPONENT
1	Management methodology and risk management
2	Project management office and methodology
3	Organisational culture
4	Management involvement and commitment
5	Monitoring and evaluation

The above presentation therefore substantiates that risk management, project management office and project methodology are deemed important by respondents from both sectors as they are loaded on the first two factors. They were followed by organisational culture and management involvement while monitoring and evaluation weighed the least.

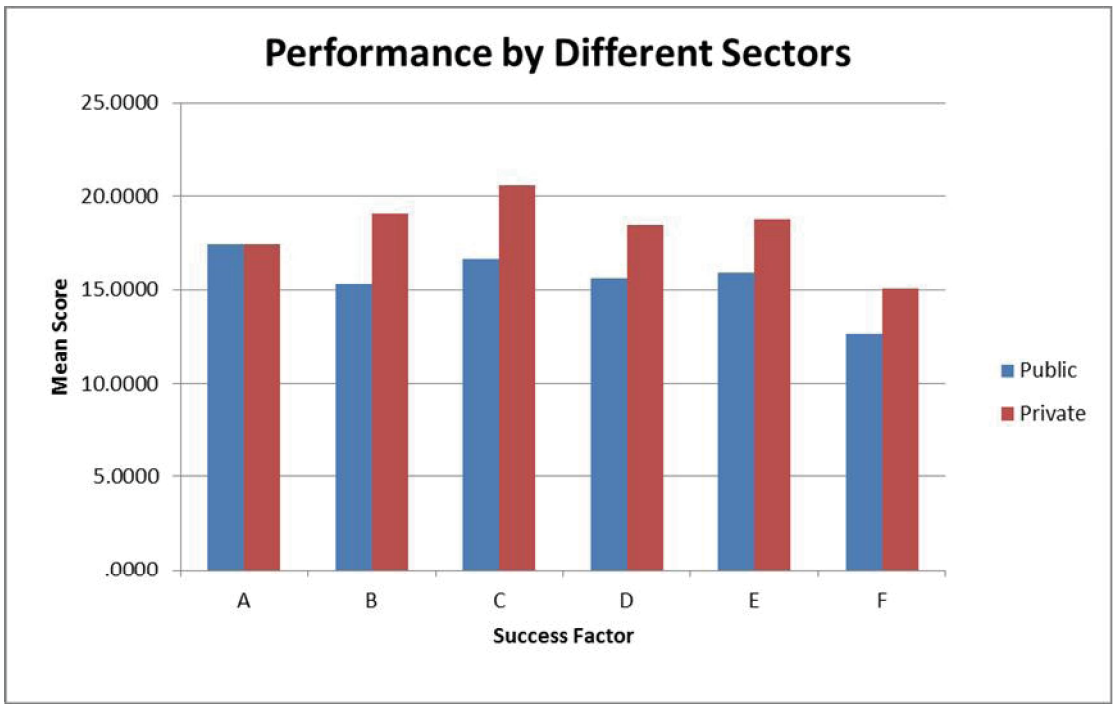
Difference between Public and Private Sector

Going back to table 5, we noted that project success is determined by seven dimensions under the private sector as compared to four factors for public. This means that, when it comes to project implementation success, the private sector places importance on three more dimensions than the public sector. In addition to the dimensions that it shared with the public sector, the private sector also placed importance on project documentation and understanding of the project methodology by senior management in the organisation. Another observable contrast was that management involvement and commitment carried more weight under private sector as compared to the public sector, while organisational culture weighed more under the public sector.

4.2.3 Statistical Significance of the Success Factors

This section of data analysis aimed at investigating if there is a significant difference between private and public sectors regarding the importance placed on critical factors impacting project success. It employs statistical t-tests to determine significance levels. First and foremost, mean of the value placed against the success factors by the two sectors is presented on the below chart.

Figure 6 - Value Placed by Public and Private Sectors on the Project Success Factors



Success Factor Key:

A	Senior management involvement
B	Project management office
C	Project management methodology
D	Organisational Structure
E	Project risk management
F	Monitoring and Evaluation

The chart presents scores of value placed by both public and private organisations on the different factors affecting the success of a project. The maximum score that can be obtained from a single factor is 25 for all of the factors, except Monitoring and Evaluation which carries 20. The minimum score is zero per factor. Generally, there is a relatively good performance by the organizations as all of them scored more than half in all factors. The highest scores were about 21 and 17 for private and public organisations respectively, where values 15 and 12 were minimums. It is also observed that the private sector performed better than the public sector in all factors except for senior management involvement and commitment, where a tie of 17 was obtained. The next step was to conduct t-tests to check significance level of the differences in performance by the sectors.

Table 7 - T-Tests for the Performance by Public and Private Sectors on different Project Success Factors

Success Factor	**P-Value**	**Significance**
Senior Management Involvement	0.986	Insignificant
Project Management Office	0.001	Significant
Project Management Methodology	<0.001	Significant
Organisational Structure	0.005	Significant
Project Risk Management	0.022	Significant
Monitoring and Evaluation	0.005	Significant

The table stipulates that five of the six probability values were less than 0.05, hence the conclusion that the performance of the two sectors is statistically different at 5 percent level of significance, the private sector outperformed the public sector in almost all dimensions. The only diversion is that of senior management involvement which is reported as insignificant. This means that senior management involvement is probably considered important both at private and public sector level. This is also

emphasised by figure 6 on page 78, which is a representation of value placed by private and public sectors on involvement of senior management in projects.

4.2.4 Reliability Statistics

This last section of data analysis focused on testing reliability of the items contained in the questionnaire to determine if the instrument was reliable enough to produce meaningful results. Cronbach's alpha was used to do this test and the results are presented on the table below.

Table 8 - Summary of Reliability Statistics

Success Factor	**Cronbach's Alpha**	**Number of Items**
Senior Management Involvement	0.907	5
Project Management Office	0.910	5
Project Management Methodology	0.853	5
Organisational Culture	0.890	5
Project Risk Management	0.946	5
Monitoring and Evaluation	0.857	4

The above table depicts the information on the reliability of the data collection instrument. It is evident that all the Cronbach's statistics are more than 0.80 hence the conclusion that the instrument could be relied upon. As a result all items in the constructs are retained. Each of the constructs had 5 items in exception of monitoring and evaluation which had only 4 items.

4.3 Conclusion

Chapter 4 focused on analysis of data collected for this study. The main aim of the chapter was to address the objectives by analysing factors identified during literature review to determine those factors seen to influence success of projects the most in

Botswana. Factor Analysis through the use of Statistical Package for Social Sciences (SPSS) tool was applied for this purpose. Further to factor analysis, t-tests were applied to investigate if there is a significant difference between private and public sectors regarding the importance placed on critical factors impacting project success. As stipulated by the literature review, Cronbach's alpha was employed to test reliability of the items contained in the questionnaire. This was meant to determine if the instrument was reliable enough to produce meaningful results.

CHAPTER 5

5 SUMMARY AND CONCLUSIONS

5.1 Introduction

This chapter is set to conclude the entire research project. It focuses on presenting a summary of the research survey findings, conclusions based on comparison of the reviewed literature and the survey results as well as suggesting recommendations for the future.

5.2 Summary of Findings

The survey results revealed that most project managers and project personnel are people who are over the age of 35, majority of which are males who hold university degrees. The results also revealed that the private sector hires more project managers and project personnel than the public sector.

As regards the identified success factors, the results of the study revealed that organisations in Botswana place more importance on risk management and existence of a well-defined, structured and well documented project management methodology. The two factors carried more weight both at public and private sectors. Setting up and running an established project management office also proved to be favoured by both sectors while organisational culture and management involvement and commitment followed with less importance placed on monitoring and evaluation.

Further analysis revealed that project success is determined by seven dimensions under the private compared to only four under the public sector. This is a revelation

that the private sector deems three more dimensions important when it comes to project success than the public sector. In addition to the dimensions that it shared with the public sector, the private sector also placed importance on project documentation and understanding of the project methodology by senior management in the organisation. There was however an observable similarity regarding management involvement and commitment, which carried equal weighting under both private and public sectors. Organisational culture weighed more under the public sector. It is however clear from the survey results that organisations in Botswana, both private and public, do not see monitoring and evaluation of projects throughout their life cycles as crucial.

5.3 Conclusions

This research continues a long tradition of exploration of factors positively influencing project implementation success, adding an element of analysis of the factors. The accumulation of theoretical study and research evidenced that there exist factors which, when applied during a project life cycle, would influence implementation of such a project in a positive light. The developing understanding of the contribution made by the identified factors to organisational performance, where project implementation is concerned, indicated clearly that organisations could expect to benefit from putting the factors in place and embedding them into their project life cycles.

It became evident from the survey results that all factors identified are crucial for project success even though some factors were deemed more important than others. The private sector differed slightly from the public sector leaving the conclusion that

private organisations go the extra mile in ensuring that the projects they implement become successful. Within both sectors, it is important therefore that management attention would be more productively focused on creating the kind of organisational environment that has been shown to be conducive to successful project outcomes.

5.3.1 Relationship to Literature

The findings of the research study strongly support the orientations of the authors as presented under literature review in chapter 2, whilst not necessarily addressing their detailed arguments. Examples of these include Pinto et al. (1987, p.169) stating that project implementation success is defined in many ways but can be thought of, in its simplest form, as incorporating four fundamental facets. These aspects include a defined time frame to completion, a limited budget, and a specified set of performance characteristics. They should be accomplished for a project to be considered successful. These performance characteristics, it turns out, are the success factors identified during literature review and being discussed in this study. They further state that the facets mentioned above are not easy to achieve unless there is buy in on the project from the top.

Dinsmore et al. (2006, p.43) emphasise that project implementation success could be attributed to aligning the whole organisation behind the right projects and programs and persistent continual improvement of all processes and practices that are crucial to the management of projects. This speaks to the culture of the organisation. The organisation should adopt a culture of continuous optimisation of its project and programme implementation processes in order for it to achieve project implementation success. Dai et al. (2004, p.524) highlight the importance of a project

management office. The office should also assume the responsibility for provision of project risk assessment, performing post-project evaluation services and ultimately playing a leading role in organisational transition to an effective project environment. They state that the project management office could be termed as a tie between strategic management and prcject managers or personnel. It may be seen, therefore, that the evidence assembled by the survey results is consistent with a developing premise in the project management literature which led to the theoretical propositions described under literature review in chapter 2.

5.3.2 Private versus Public Sector Project Implementation: Is there a Difference?

As evidenced by the literature review, differences do exist between the private and public sectors when it comes to implementation of projects. Elder et al. (2008) declared that the differences were probably brought about by the different organisational cultures and environments which exist in the two sectors. In Botswana, organisations apply different project management methodologies to implement projects. Government departments employ PRINCE 2 across the board, while financial institutions like Letshogo Holdings and Barclays Bank apply a combination of PRINCE 2 and PMBOK. At Barclays Bank, Information Technology projects are implemented using PMBOK while the rest of the projects conform to PRINCE 2 principles.

This difference in methodology applications may bring about differences in success rate. While there is no literature to support the above findings for Botswana organisations, the literature review revealed statistics which showed that while public

sector project delivery has difficulties, the private sector has also not been spared. This was reported by Standish Group in 2003, after considering 13,522 IT projects.

5.4 Recommendations

The recommendation by the study is that organisations in Botswana, both private and public, should utilise their Research and Development departments to identify and establish factors which would positively influence and improve success of projects they implement. Once these factors are identified they should benchmark with organisations outside the country which have been successful in running and implementing projects to gain insight on how they prioritise the factors.

The literature review placed a lot of emphasis on monitoring and evaluation of projects to attain project success. This however is not the case in Botswana as evidenced by the survey results. Perhaps a paradigm shift is necessary here. Further benchmarking should be performed on the identified factors and a framework of tools for the appraisal, monitoring and evaluation of projects should be developed. Such tools could be used to provide traction during project implementation and reveal impact of project delays in monetary terms. As part of impact analysis, the processes and actors involved in project implementation through the identified success factors could be further explored using stakeholder analysis techniques.

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7 APPENDIX A: QUESTIONNAIRE

FACTORS IMPACTING IMPLEMENTATION OF PROJECTS IN BOTSWANA

This is a study on the critical factors impacting successful implementation of projects in Botswana and is conducted by Ms Thato T. Kgatlwane, a Master of Business Administration Student at the Univeristy of Botswana. Kindly spare a moment to complete the attached questionnaire.

The questionnaire is to be completed by project managers, project resources or any other employees who have some project involvement in organisations in Botswana and has 2 sections titled:

1. Questions about project implementation success
2. Questions about yourself (Demographic Questions)

All your responses will be completely confidential and anonymous. You will not be asked to write your name and the answers will never be associated with you in any way. **PLEASE DO NOT WRITE YOUR NAME ANYWHERE.**

Thanking you in advance for your support.

Section 1

Questions about project implementation success

1.1 Please indicate the extent to which you agree with each of the following questions. Mark the appropriate box where: **1- Strongly Disagree** **2- Disagree** **3- Neutral** **4- Agree** **5- Strongly Agree**

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
	1	2	3	4	5
Senior Management Involvement					
Senior management in my organization showed commitment and ownership throughout the project.					
Senior management in my organization shared responsibilities with the project team to ensure project success.					
In my organization, senior management was responsible for the requests for additional resources when the need arose.					
I agreed with senior management on the degree of my authority and responsibility for the project.					
Senior management granted us the necessary authority and supported our decisions concerning the project.					
Project Management Office (PMO)					
My organization runs a project management office to manage and coordinate all projects.					
My organization's prcject management office helps instill the much needed project management discipline across the organizations.					
In my organization the project management office helps provide the structure needed to standardize project management practices and facilitate project portfolio management, as well as determine methodologies for repeatable processes.					
The project management office enables my organization to complete more projects on time and on budget with fewer resources.					
Having a project management office has greatly helped my organization attain project success.					
Project Management Methodology					
My organization has a project management methodology in place to follow while running projects.					
My organization's well documented, planned and executed project management methodology helps in delivery of good and successful projects.					
My organization's project management methodology enforces learning and sharing of best practice by organizations and ensures these are usefully applied in					

future projects.					
In my organization all correctly executed projects should follow a well established and well worn path or methodology in order to attain success.					
Senior management should have a certain level of understanding of the project management methodology used within my organization.					
Organisational Culture					
My organization has a project management inclined culture.					
Projects are central to the day to day business operations in my organization.					
My work environment exhibits respect for time and money spent on projects.					
There is a shared commitment for project success by all colleagues in my organization.					
My organization adheres to and respects principles of project management.					
Project Risk Management					
Risk management is embedded and made part of the project in my organization.					
Risks are identified early on the project.					
Identified risks are communicated to all project stakeholders.					
Ownership of the risks and mitigating actions are made clear and communicated to the relevant stakeholders.					
The risks are documented and tracked to closure.					
Monitoring and Evaluation					
In my organization all important aspects of the project are monitored, including measures which provided a complete view of project progress.					
It is the norm in my organization to hold regular meetings to monitor project progress.					
Project progress is reviewed by independent parties on a regular basis in my organization.					
It is the norm in my organization to share results of project reviews with project teams and steering committees to ensure impact upon budget and schedule.					

1.4 Please indicate any challenges that you see in your organization that hinder success in implementation of projects.

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1.5 Please provide suggestions on how your organization can best improve its success rate with implementation of projects:

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Section 2

Questions about Yourself

2.1 Age: 18- 25 ☐ 26- 35 ☐ 35+ ☐

2.2 Gender: Male ☐ Female ☐

2.3 Please indicate your monthly income before taxes: Under P5 000 ☐ P5 000 – P15 000 ☐

P15 000 – P25 000 ☐ Above P25 000 ☐

2.4 Please indicate your position/title on the project:

_____

2.5 How long have you been working with projects: Under 5 years ☐ 5 – 10 years ☐
10 – 15 years ☐ Above 15 years ☐

2.6 Please indicate the highest level of education you have attained:

_____

2.7 Please indicate years of post qualification experience:

_____

2.8 Please indicate your sector: Public ☐ Private ☐ Other ☐

2.9 If other, please specify:-

_____

2.10 Please indicate your industry: Construction ☐ Manufacturing ☐ Banking ☐

2.11If other, please specify:-

_____

2.12 Please indicate the number of years your organization has been in operation:-

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2.13 Please indicate the total number of employees in your organization:

_____

2.14 Please indicate your organization's annual sales turnover:

_____

2.15 Please indicate your location / duty station:

_____

Thank you for the time spent completing this questionnaire. The results will help organizations in Botswana improve project implementation success in the future.