Cape Peninsula University of Technology

THE IMPACT OF HIGH PERFORMANCE WORK PRACTICES ON PROJECT PERFORMANCE IN SELECTED CONSTRUCTION COMPANIES IN CAPE TOWN, SOUTH AFRICA

by

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DECLARATION

I, Munodani Chapano, declare that the contents of this dissertation represent my own unaided work, and that the dissertation has not previously been submitted for academic examination towards any qualification. Furthermore, it represents my own opinions and not necessarily those of the Cape Peninsula University of Technology.

Signed..... Date.....

ABSTRACT

The purpose of this study was to determine the impact of four High Performance Work Practices (HPWPs) on project performance in selected construction companies in Cape Town, South Africa. The four HPWPs comprised: recruitment and selection (RS); performance appraisal (PA); training and development (TD); and compensation system (CS). The study employed a positivist philosophy utilizing the survey method to collect data from 70 employees who were drawn from a select group of multi-project construction companies in Cape Town, South Africa. The respondents comprised employees who worked as project team members and line staff/ administrative staff. Non-probability sampling procedure in the form of convenience sampling technique was used for the selection of five (5) construction organisations in Cape Town, South Africa. Probability sampling procedure in the form of stratified sampling technique was employed in the selection of the respondents to complete the questionnaire.Collected data was captured and analyzed using the Statistical Package for the Social Sciences (SPSS) version 24. The main research question of the study was: What is the relationship between the four HPWPs and project performance? The results indicate that CS has a weak positive relationship with project performance, whereas TD, PA and RS have weak negative relationships with project performance. It also emerged that there are other factors that significantly affect project performance other than the HPWPs investigated.The results of this study are significant because they provide a unique view of the work environment that has been insufficiently examined. Also, very few studies have focused on the above four universal HPWPs, which this study was earmarked for. The results that are obtained from this study significantly add to the overall body of knowledge pertaining to theories and their application in HRM, project performance and multi-project environments issues.

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First and foremost, I would like to thank God, and my Lord Jesus Christ for giving me the strength, wisdom and financial means to complete this study. I wish to thank my supervisors: Prof Chux Gervase Iwu and Dr Michael Twum-Darko for their continuous support, enlightenment and timeous feedback throughout the research.

DEDICATION

I dedicate this study to my mother, Celia Chapano, my uncle, Tobias Matanga, for their encouragement throughout all these years. May God protect and give them many more years of life.

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GLOSSARY

Abbreviations and Acronyms

AMO Ability, Motivation and Opportunity

ATR Annual Training Report

BCCEI Bargaining Council for the Civil Engineering Industry

BCEA Basic Conditions of Employment Act

CS Compensation System

GDP Gross Domestic Product

EEA Employment Equity Act

HR	Human Resource
HRM	Human Resources Management
HPWPs	High Performance Work Practices
MPEs	Multi-Project Environments
NQF	National Qualifications Framework
PA	Performance Appraisals
PMBoK	Project Management Body of Knowledge
PP	Project Performance
RBV	Resource-Based View
RS	Recruitment and Selection
SARS	South African Revenue Services
SASQLS	South African Statistics Quarterly Labour Force Survey
SETA	Sector Education and Training Authority
SDA	Skills Development Act
SDL	Skills Development Levies Act
SDF	Skills Development Facilitator
SPSS	Statistical Package for the Social Sciences
TD	Training and Development
WSP	Workplace Skills Plan

Definition of terms:

Project

A project is defined by the Project Management Body of Knowledge (PMBoK) (2013:5) as “a temporary endeavour undertaken to achieve a particular aim.” Burke (2013:2) defines it in a similar way as “a temporary endeavour undertaken to create a unique product or service.”

Project Performance

Project performance is the extent to which a project achieves project and business objectives as measured by factors such as: “team satisfaction, business success, health and safety, impact on the client, project efficiency, and preparing for the future” (Chan 2010:5; Chan & Tam, 2000; Kerzner, 2009:6; Serrador & Turner, 2014:76; Shenhor, et al., 1997:8; Turner & Zolin, 2012:89).

Project Management

PMBok (2013:8) defines project management as “the application of knowledge, skills, tools, and techniques to project activities in order to meet or exceed stakeholder needs and expectations from a project.”

Human Resources Management

Human resource management is a “strategic and coherent approach to the management of an organization's personnel who individually and collectively contribute to the achievement of the objectives of the business,” through recruitment and selection, training and development, retaining and compensating the manpower services to achieve job and organizational requirements (Slotte, Tynjala & Hytonen, 2004).

Multi-project organization

A multi-project organization is defined as an “organizational unit that executes a substantial share of its operations as projects where many different or similar projects with independent/ interdependent existence and separate goals, happen to run simultaneously” (Payne, 1995:163; Turner & Keegan, 2001:258).

Multi-project environment

Multi-project environment is an organizational setting in which the primary business is projects, and where multiple projects are executed simultaneously (Turner & Keegan, 2001:258).

Construction Organizations

Construction organizations are diverse in nature, “ranging from simple housing developments to highly complex infrastructure projects” (Loosemore *et al*., 2003:3). Project participants in these organisations may include project managers, clients,

designers, contractors, consultants and construction workers, etcetera. (Du, Liu & Picke, 2012).

Construction Project Team

A construction project team is a loose grouping of interested parties holding similar and / or diverse skills, brought together to execute a specific construction project (Emmit & Gorse, 2007) and these may include a project manager, engineer, architect, subcontractor, contractor, etcetera.

HPWPs

HPWPs are human resources practices that strategic HRM theorists consider performance enhancing and have a huge impact on the success of an organisation (Huselid, 1995). This study focuses on four HPWPs which are “recruitment and selection (RS); performance appraisal (PA); training and development (TD); and compensation system (CS)” (Combs, *et al.*, 2006; Khan & Rasheed, 2015:436).

CHAPTER 1: INTRODUCTION

1.1 Introduction

A growing number of existing literature and studies acknowledge a positive relationship between Human Resources Management (HRM) and organizational performance (Combs, Liu & Ketchen,2006; Kouhy, Vedd, Yoshikawa & Innes, 2009; Toulson & Dewe, 2004).The impact of High Performance Work Practices (HPWPs) on organizational productivity has gained momentum in the fields of HRM and organizational psychology, and noted to be crucial elements in ensuring success (Belout & Gauvrea, 2004:10; Huselid, 1995:635; Masood, 2010:1; Nukić & Šuvak, 2013:669). Recruitment and Selection (RS), Training and Development (TD), Performance Appraisals (PA), and Compensation System (CS) are four of a host of HPWPs claimed to pose a significant implication on the success of an organisation (Grobler, Warnich, Carrell, Elbert & Hatfield, 2011; Turner, Huemann & Keegan, 2008:42). Pirzada, Hayat, Ikram Ayub and Waheed (2013:165) are also of the opinion that effective Human Resource (HR) practices are supported in any field where HPWPs are well deployed. However, very few studies have attempted to reveal the importance of HRM practices on project performance (Hendriks, Voeten & Kroep, 1999:181; Pinto & Prescott, 1988:5-18; Slavianska, 2015:350-355).

Nevertheless, Harr (2009) suggests that issues such as HRM are some of the problems that confront Multi-Project Environments (MPEs). Payne (1995) also suggested that companies involved with multi-projects need to focus more on personnel issues. MPEs are organizations in which all the work is executed as projects and where multiple projects are managed concurrently (Patanakul & Milosevic, 2008:2). In this regard, the construction industry has been widely recognized by many researchers as MPEs (Engwall & Sjo¨gren, 2003; Elonen & Artto, 2003; Hashim, Chileshe & Baroudi, 2012:21, 2012:21; Loosemore, Dainty & Lingard, 2003; Meredith & Mantel, 2012; Kaulio, 2008:338). Construction organisations are well known for more use of manpower in business activities as compared to other fields (Ghatehorde & Chhinzer, 2009:37). Hence, this study determined the impact of the afore-mentioned four HPWPs on project performance in selected construction companies in Cape Town, South Africa.

1.2 Problem statement

Besides unanimous agreement by diverse researchers (Anavi-Isakov & Golany, 2003:9; Hendriks, Voeten & Kroep, 1999:181; Pinto & Prescott, 1988:5-18; Slavianska,2015:350-355) as to the importance of HRM in ensuring organizational success, in the context of project management, the impact of HRM on project performance appears to be considered less crucial (Fabi & Pettersen, 1992; Belout & Gauvreau, 2004:1–11; Slavianska, 2015:350-355). This has led to the conclusion that the relationship between project management and HRM has no significant impact on project performance (Belout & Gauvrea, 2004:1; Belout, 1998:21). However, the majority of these studies took place in developed nations, with few in developing countries, and not many studies have subsequently been conducted to retest or substantiate the significance of HRM on project performance (Khan & Rasheed, 2015:435-445). This study thus attempts to revisit the question of the impact of HPWPs on project performance, in selected multi-project construction companies in Cape Town, South Africa. As much as 90% of contemporary projects are realised in multi-project environments such as construction companies (Slavianska, 2015:1). The four HPWPs tested were “Recruitment and Selection (RS), Training and Development (TD), Performance Appraisals (PA), and Compensation System (CS).” A correlational study involving the four HPWPs and project performance could help to reconfigure the relative importance of HRM in the management of projects and lead to an explosion of studies geared to discovering how HRM can be practiced to contribute to the overall success of multi-project organisations.

1.3 Research objectives

The primary objective of this study was to determine the impact of the four HPWPs (Recruitment and Selection (RS), Training and Development (TD), Performance Appraisals (PA), and Compensation System (CS)) on project performance in selected construction companies in Cape Town, South Africa. Project performance was measured by the following criteria:

I. project efficiency;
II. team satisfaction;

III. impact on the customer;
IV. business success;
V. preparing for the future; and
VI. health and safety

The main focus of the study was to determine the perceptions of the project team members (project manager, engineer, architect, contractor, etcetera.) and some line staff (financial managers, HR managers, administrative staff, etcetera.) on the effects of HPWPs on project performance in their construction organizations, based on their knowledge and experience of working in projects.

The secondary objectives of this study were as follows:

I. To investigate the relationship between the four HPWPs and project performance in the construction companies;

II. To establish how well the organizations have performed as a result of the application of HPWPs;

III. To ascertain how the project team members and some line staff perceive HPWPs in their organizations; and

IV. To provide recommendations with regard to the relationship between HPWPs and project performance.

1.4 Research questions

The study was guided by the following research questions:

I. What is the relationship between the four HPWPs and project performance?
II. How well have the organizations performed as a result of the application of HPWPs?
III. How do project team members and some line staff perceive the application of the four HPWPs in their organizations?

1.5 Significance of the research

Most research in relation to the effects of human resources practices on project performance has focused on developed countries with very few in developing countries. Even so, the few that focused on developing economies examined other industries but not multi-project environments, yet 90% of the contemporary projects are realised in the conditions of multi-project environments (Slavianska, 2015:1). Therefore, this study gave a unique view of a work environment that has been insufficiently examined (construction multi-project environments in South Africa's Cape Town area). Also, very few studies have focused on the above four universal HPWPs, which this study was earmarked for (Ghatehorde & Chhinzer, 2009:37). This made this research implicitly unique and important. The results that were obtained from the study significantly add to the overall body of knowledge pertaining to theories and their application in HRM, project performance and multi-project environments issues.

1.6 Summary

This chapter presented the introduction, problem statement, research objectives, research questions and significance of the current study. The following chapter presents the review of the literature that is relevant in an endeavour to justify and contextualise the problem statement of this study.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

The objective of this chapter was to provide a review of the literature concerning the four HPWPs as the independent variables and Project Performance (PP) as a dependent variable in the construction MPEs. This was done in order to contextualise the research problem, and find information that justifies the rationale for this study. In this regard, by reviewing academic arguments and debates postulated around the variables, key issues that needed to be explored were identified, and a deeper understanding and insight into the topic of the current study was gained. Literature review is a structured and systematic process that finds all the relevant sources, and critically evaluates them against the research topic (Saunder, Lewis & Thornhil, 2013). This review focused on the research output of existing and current work of scholars, and expert opinions found in books, academic journals, and magazines. Saunder *et al*., (2013) concur that scholarly sources provide in-depth analysis of topics, report research findings and promote further scholarly communication and research. Moreover, scholarly work is usually reviewed and critically evaluated by a panel of experts. Thus, this study reviewed literature that pertains to HPWPs: (RS, TD, PA, and CS) and project performance in the construction multi-project work environments. The section that follows provides the conceptual framework of the study. The last part of this chapter highlighted the main findings of the review and how they were linked to the research problem and objectives of the current study.

2.2 The Conceptual framework of the study

In more than a decade, most HRM research has focused on examining the relationship between human resource management practices and organizational performance. Consequently, a growing number of existing literature and studies acknowledge a positive relationship between HPWPs and organizational performance (Block &Pickl, 2014; Combs, Liu &Ketchen, 2006; Knies & Leisink, 2014; Kouhy, Vedd, Yoshikawa & Innes, 2009; Toulson & Dewe, 2004).

A substantial review of literature in the hybrid domain of human resource management and project management has led to the discovery of numerous models which offer both direct and indirect influence of HPWPs on organizational performance and or project performance. To briefly highlight but a few of these important and common models; there is the contingent framework, the resource-based view model, the social exchange theory and the AMO framework.

The contingent framework states that contextual factors such as a company's business strategy, size, and technology, degree of unionization, culture, politics, climate and social interaction are essential for understanding the relationship between human resource practices and organizational performance (Alagaraja, 2012). This means that human resource policies and practices must effectively deal with the organization's contextual factors. The resource-based view (RBV) suggests that a competitive advantage for an organization is achieved if the available resources are non-substitutable, rare, valuable, and are difficult to imitate. Thus, according to RBV perspective, unique human resource practices positively influence employees' behavior, motivation and abilities directly, which in turn boost performance (Katou and Budhwar, 2010). Social exchange theory is based on the premise that employee performance is affected by the relationship that exists between the organization's HRM practices and its employees. Thus, the relationship between the firm and its labour is an exchange of mutual investment. For that reason, if an organization provides its employees with an excellent deployment of HR practices, the employees will reciprocate by availing positive discretionary effort and becoming more committed (Choi, 2014).

But, as far as models in the HR domain are concerned, of particular interest to this study is the AMO framework model. This model was postulated by Appelbaum, Bailey, Berg and Kalleberg (2000). The model proposes that performance is induced by Ability, Motivation and Opportunity (AMO). In relation to this study, it is the best framework because the relationship between HPWPs and project performance is explicitly provided in that employees who have the "Ability" to execute the work, with the required skills, attitudes and knowledge; who are "Motivated" to do the work, and who have the "Opportunity" to organize and apply the skills, attitudes and knowledge acquired in the process of doing

their work are best able to enhance organizational performance or project performance.

As stated above, AMO model consists of three bundles, namely Ability, Motivation and Opportunity (AMO).The following briefly outlines the meaning and components of each bundle as offered by Kroon, Van de Voorde and Timmers (2013):

I. Bundle 1 (Ability): Employee ability-enhancing practices (e.g. training and development, recruitment and selection);
II. Bundle 2 (Motivation): Employee motivation-enhancing practices (e.g. high compensation, performance appraisal, career development, and
III. Bundle 3 (Opportunity): Practices that give employees the opportunity to go the extra mile. Such practices include employee involvement and team work.

One can argue therefore that an organization will perform better if it has recruited and selected competent employees as well as ensuring the employees are well trained and skilled. Moreover, motivational practices such as high compensation and performance appraisal will enable the worker to expend discretionary behaviors, such as organizational citizenship behaviors. Providing opportunities such as team work, employee involvement and information sharing will enable employees to go an extra mile, which is, performing more than what is expected (Appelbaum et al., 2000).

2.3 The generic project management environment

Project management is the application of the 10 knowledge areas of project management throughout the project life cycle to achieve project objectives. The ten (10) knowledge areas of project management are: "Project Integration Management; Project Scope Management; Project Time Management; Project Cost Management; Project Quality Management; Project Human Resource Management; Project Communications Management; Project Risk Management; Project Procurement Management; and Project Stakeholder Management" (Meredith & Mantel, 2012; PMBOK, 2013). As mentioned earlier, the Project Management Body of Knowledge (2013:8) defines project management as "the application of knowledge, skills, tools, and techniques to project activities in order to meet or exceed stakeholder needs and expectations." Burke (2013:3) defines it "as a process of integrating everything

that needs to be done as the project evolves through its life cycle in order to meet the project's objectives."

A project is defined by the PMBoK (2013:5) "as a temporary endeavour undertaken to achieve a particular aim." Burke (2013:2) defines it in a similar way "as a temporary endeavour undertaken to create a unique product or service" (Clements & Gido, 2012:04). In this regard, temporary means that the project has a specific start date and end date. The uniqueness feature of a project implies that the project deliverable will be different in some way from other similar deliverables. For example, the construction of the Cape Town stadium was a temporary endeavour and unique in the sense that it had a definite start date and completion date and, the final product (the Cape Town stadium) was not similar to other stadia built in South Africa. The difference between projects and operations is that "operations are on-going and repetitive while projects are temporary and unique" (Gray & Larson, 2008:318).

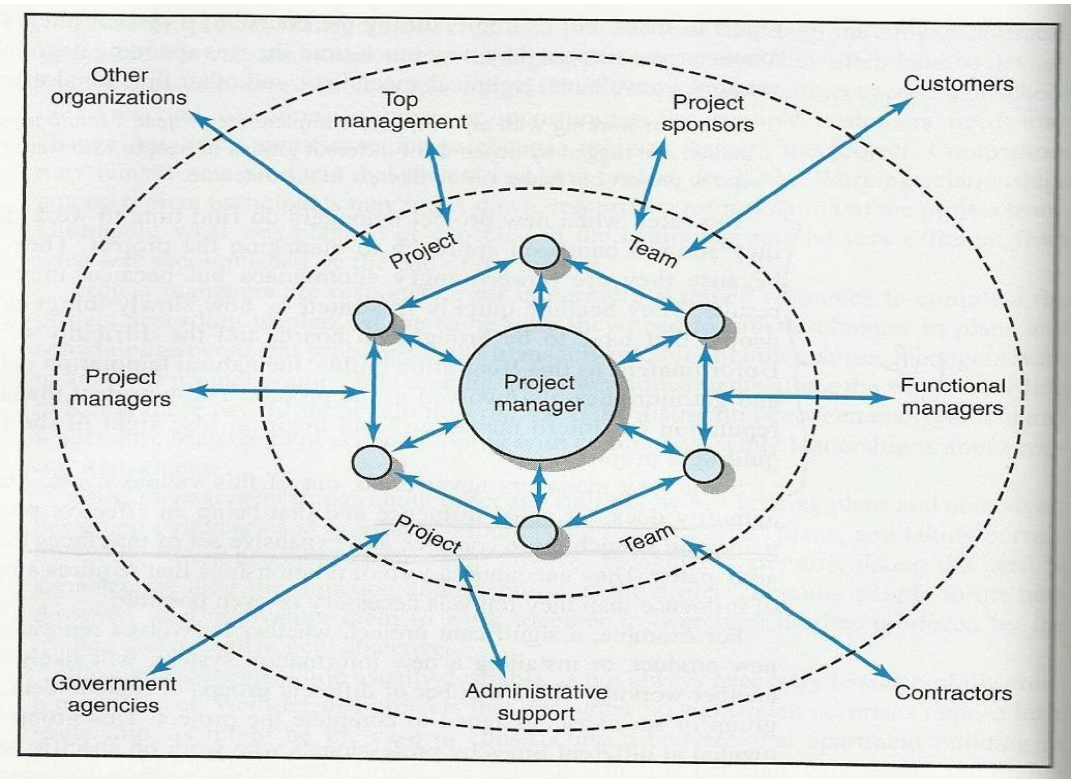
The tools and techniques of project management are derived from the 10 knowledge areas of project management. There are generic tools that are universal to varying forms of management and these comprise computers, Microsoft programmes and other performance standards tools. Conversely, there are tools and techniques specific for effective project execution (Gray & Larson, 2008:65). These project management tools and techniques can encompass work breakdown structures, Gantt charts, resource smoothing and crashing, critical path methods and milestone charts, etcetera. (Burke, 2013). Nevertheless, all these tools and techniques need competent and knowledgeable human resources to effectively complete the project undertaking. The human resources responsible for a successful completion of a generic project can be broadly categorized into "project stakeholders". A typical project management environment analysis entails identifying the project stakeholders and their ability in affecting the project outcome.

Morphy (2008) defines a project stakeholder as anyone internal or external to the organization, whether at senior or junior level, who is affected by the project. Project stakeholders, according to Karlsen (2002), can therefore comprise the "organization itself, project team members, project managers, clients, end users, contractors,

consultants, labour unions, line organization, public authorities, financial institutions, insurance companies, controlling organizations, media, and competitors."

The interest of this study lies in the application of HPWPs to the internal human resource project stakeholders, namely project team members, project managers and line staff. Figure 2.1 represents a network of stakeholders (from Gray & Larson, 2008:318).

Figure 2.1: Network of project stakeholders



(Source: Gray & Larson, 2008:318).

2.4. Characteristics of multi-project organizations

Multi-project environments are defined as organizational environments in which multiple projects are managed concurrently (Patanakul & Milosevic, 2008:2). MPEs exist mainly to promote the management of projects in order to achieve strategic business objectives. The projects managed range from being diverse in size and importance, to sharing the same resources or being interdependent, depending on the organisation (PMI, 2008).

Project managers in multi-project environments differ in many respects from their counterparts in single-project environments. Multiple project managers need to link multiple concurrent projects, and this entails managing multiple teams. There is also the challenge of switching over from project to project, which does not exist in the management of single projects (Fricke & Shenhar, 2000). Elonen and Artto (2003) identify six problems associated with the management of multiple internal development projects, which are: “(i) shortage of project level activities, (ii) shortage of resources, competencies and project methods, (iii) lack of commitment, clear roles and responsibilities, (iv) shortage of portfolio level activities (v) lack of information management and (vi) insufficient management of project-oriented organization.” Cooper, Edgett and Kleinschmidt (2004) concur and add that resource availability and allocation is the main challenge of multi-project organisations. Patanakul and Milosevic (2008) point out resource availability and interdependency between projects as enormous challenges of multi-project work.

The main resource for addressing these concerns is human resources, so the difficulties centre on the need for coherent interaction between project managers and functional managers to reach a unanimous agreement on the allocation and distribution of personnel (Blomquist & Müller, 2006). According to Pryke and Smyth (2006:3-4), human resources allocation and management of employees’ performance are vital activities for ensuring project management success. Hedberg and Höglander (2013), identify difficulties in composing teams and choosing appropriate project methods, and lack of multi-project management systems (Elonen & Artto, 2003; Fricke & Shenhar, 2000). Harr (2009) suggests that issues such as workload for some employees, stress and resource management are some of the problems caused by multi-project work. The above means that companies involved with multi-projects need to focus on how projects share organizational resources, particularly the personnel; and that the organization of the team should be unique as compared to the single projects (Payne, 1995). Training of employees was suggested as a measure that can enable employees to effectively execute different roles and responsibilities across different projects and in their functional departments (Fricke & Shenhar, 2000: 263).

The studies described above indicate a need for rigorous HR practices attuned to the specific characteristics of multi-project work environments to manage human resource to ensure successful project performance (Huemann *et al*., 2007). The challenge is that in multi-project management, the control that is applied in single project management can be multiplied to span across several projects. In this regard, the construction industry has been widely recognized by many researchers and professionals as a project based, multi-project environments (Hashim *et al*., 2012:21; Engwall & Sjo¨gren, 2003; Elonen & Artto, 2003; Kaulio, 2008:338; Meredith & Mantel, 2012).

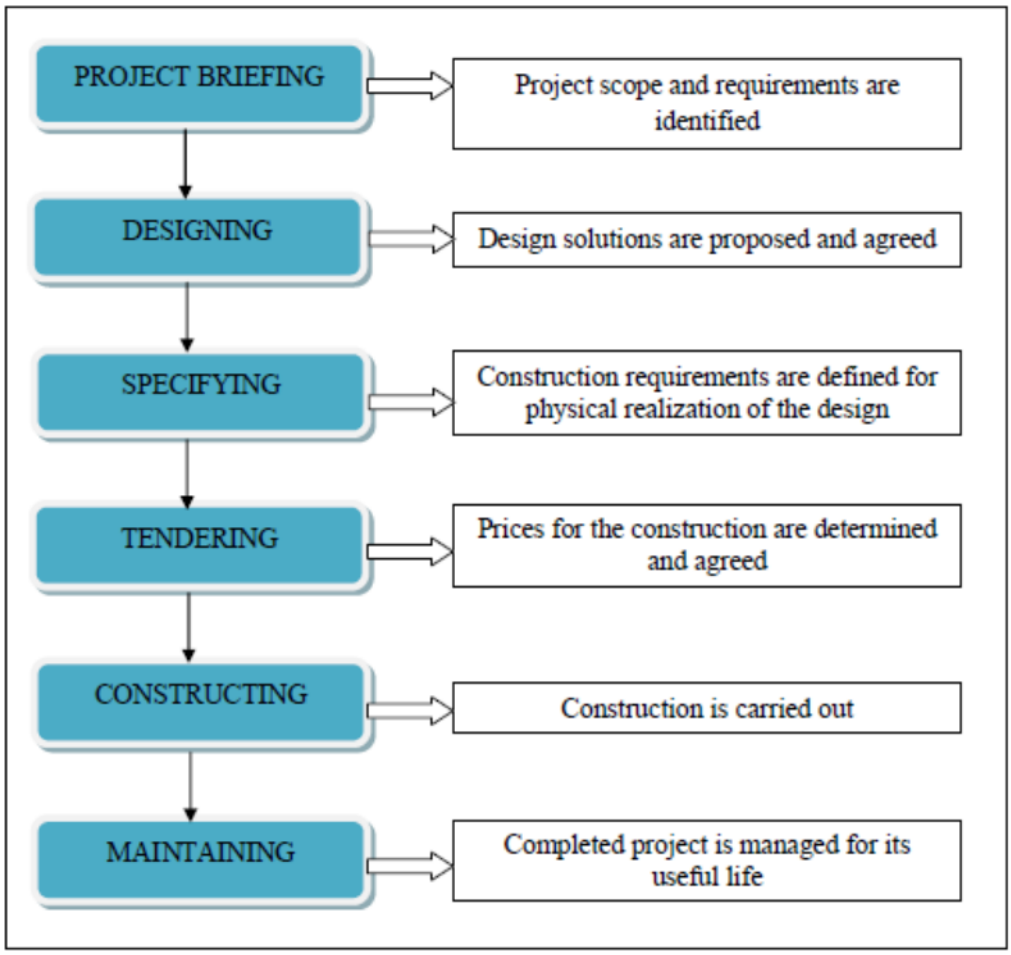
2.5 The South African construction industry

South African Statistics Quarterly Labour Force Survey (SASQLS) 2015 report revealed that the construction industry is ranked 4th largest employment industry in South Africa out of the ten (10) employment industries for the period from 2014 to 2015. It constitutes an average of 8.88% of the employed labour force in the country across all industries. Moreover, from Quarter 3: 2014 to Quarter 2: 2015, large labour employment gains were observed in the following industries: Trade (81 000) and Construction (59 000) whereas in 2014, the same period witnessed similar growth in Agriculture (211 000), Construction (180 000), and Finance (135 000). According to SA reports online, the construction industry contributes 8.6% of the country's Gross Domestic Product (GDP), meaning that besides being among the top five employing industry, the construction sector also plays a central role in driving the country's economy (Khan, 2008:282).The construction industry's contribution to the GDP in the United Kingdom is nearly 9% (Cooke & Williams, 2009:4). Generally, the construction industry is famous for being labour intensive (Koehn & Reddy, 1999).

The construction industry focus in South Africa consists of fabrication of new structures such as building a new house and, effecting alterations and repairs to existing structures. The construction project passes through several processes and stages, from conception to completion and handover. As depicted in Figure 2.2, the construction project consists of six phases, "namely: project briefing, designing, specifying, tendering, constructing and maintaining" (Azmy, 2012:15). Each phase

has specific activities that should be performed effectively by a project team to ensure successful project performance.

Figure 2.2: Construction project generic phases

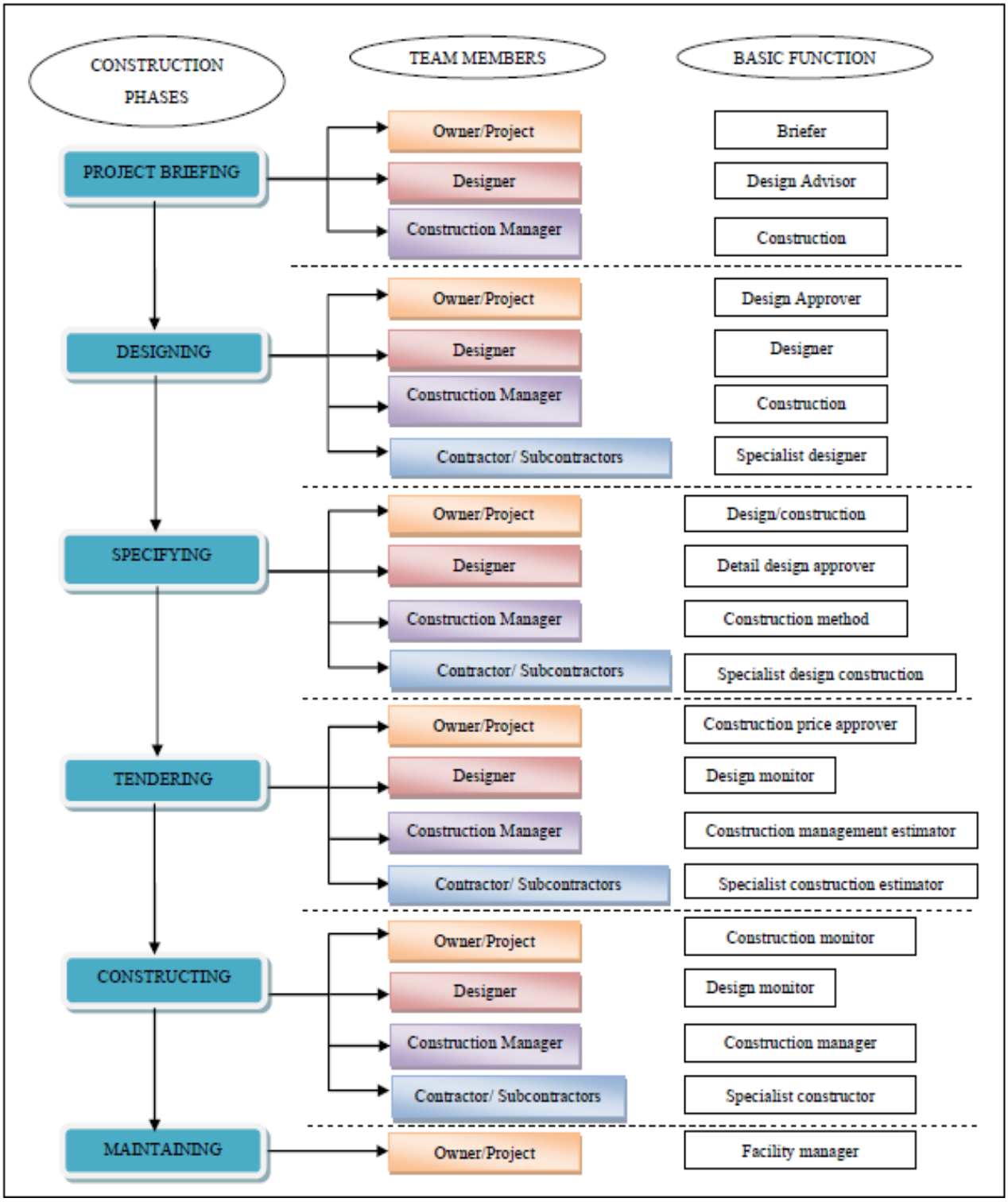


(Source: Cornick & Mather (1999) cited in Azmy (2012:15)

A construction project team may comprise a project manager, engineer, architect, client, subcontractor and a main contractor, financier, legal consultant, cost consultant and other consultants and members, depending on the requirements of the project (Uher & Loosemore, 2004). The main contractor's role is to execute and complete the construction project work according to the terms specified by the client or owner in the contract (Hagan, Bower & Smith, and 2011:79). However, Azmy (2012:13) posits that a common project team consists of "owner, project manager,

architect, engineers, contractors and subcontractors.” Other people that can be involved in construction projects are construction workers and superintendent. The team members should have diverse, but complementary skills. Teamwork is regarded as the lifeblood for the success of a construction project (Azmy, 2012:11), as major frustrations in a construction emanate from failure by a project team to work together (Parker, 2008). This entails the demand to ensure that HR practices are undertaken in a manner that will motivate and promote the spirit of team work among project team members. For example, the selection of team members should be based on their expertise, skill, efficiency, discipline and experience. Project managers, according to Hendrickson and Au (1988), are the most important people for ensuring successful project performance. In Figure 2.3, the basic functions of a project team are shown at different stages of the construction project, with the project manager or owner of the project appearing throughout the construction project life cycle.

Figure 2.3: Construction project team and its basic functions



(Source: Cornick &Mather (1999) cited in Azmy (2012:16))

Kazaz and Ulubeyli (2007:2132) opine that personnel is needed in every process of the construction project and thus represents the connecting link in every activity of the project in order to ascertain project objectives. Kazaz and Ulubeyli (2007:2132) added that allocating people to projects and resource shortages in multi-project environments is a troubling issue. The availability of resources and the allocation of personnel in the multi-project environments have been appreciated by many project management scholars, with successful project delivery being enhanced by the ability of the project manager to assign personnel and resources to a well prioritised project portfolio (Elonen & Artto, 2003; Fricke & Shenhar, 2000; Payne, 1995; Patanakul & Milosevic, 2009). This entails that effective application of core HR practices such as HPWPs will go a long way in alleviating the adverse impact that this might pose on project performance. Project managers in multi-project environments are different from single project managers in that instead of being responsible for the execution and success of one project, they are responsible for the success of diverse individual project goals, and for managing interdependencies and resource distributions amongst projects (Patanakul & Milosevic, 2008; Teller, Unger, Kock & Gemünden, 2012). The projects may be at the different stages of construction with different start times and being executed at different sites or locations.

2.6 Overview of project performance

Numerous studies have been covered on project performance, and have revealed diverse measures of project performance (Aaron, Dov, Ofer, Alan & Maltz, 2001:8494; Belassi & Tukel, 1996; Barkley & Saylor, 1994; Navarre & Schaan, 1990; Naqvi, Bokhari, Aziz & Rehman, 2011; Shenhar & Dvir as cited in Serrador & Turner, 2014:76). It is traditionally agreed that project performance is measured by the potential to meet budgeted time, cost, and quality goals (Barkley & Saylor, 1994; Meredith & Mantel, 2012:3; PMBoK, 2013:160).

Aaron et al. (2001) outline four distinct success measures for project performance that includes “(1) impact on the customer (2) project efficiency, (3) direct business and organizational success, and (4) preparing for the future.” Meredith and Mantel (2012:3) argue that the “expectations of the client” should be introduced as an additional fourth dimension. Another study by Shenhar and Dvir (2007) endorse

Aaron et al.'s measures as the most appropriate to gauge project performance. However, they add a different component, which is impact on the team.

The model proposed by Aaron et al. and Meredith and Mantel focuses on the customer/client and the yields of the project after completion. Project efficiency is measured by the project's ability to meet time, cost and quality specifications (Meredith & Mantel, 2012:3). The impact on the customer is recognized from the responses of the end users to whom the products or services are delivered. The category of "end users" embraces the consumers or users of the end product, as well as investors in the project. Business success is "measured in terms of the profit and relationships with clients that any organization earns after the project is completed." Preparing for the future is determined by reviewing project documents and the lessons learnt during the course of the project (Naqvi et al., 2011: 8494). The following sub-sections of 2.6 further elaborate project efficiency's components and health and safety as measures of project performance.

2.6.1 Cost project performance

Project cost embraces all costs incurred by a project in all the project phases from conception to completion, and these costs encompass costs that arise from modification during construction, variations and legal claims for litigation or arbitration that the project may encounter during construction. This measurement is gauged on the ability of the project to be completed within budgeted cost, determined by the variance between the actual cost and the budgeted cost of a project (Azmy, 2012:15). This will result in a project being over budget or under budget. Successful project performance is when a project is under budget or completed within the estimated budget whereas the opposite is true for unsuccessful project performance.

2.6.2 Time project performance

Successful project performance is when a project completes on time. Construction time is the "elapsed period from the commencement of site work to the completion and handover of the project to the client" (Shah Ali & Rahmat, 2010:29). Time variance is recognized as one of the major techniques of measuring project performance, as clients and other stakeholders require their construction projects to

be completed within the minimum time projected (Lim & Mohamed, 2000; Odeh & Battaineh, 2002; Salter & Torbett, 2003). The construction project time is arrived at by the project planner's or the client's analysis of the available project information. Due to damages suffered by the client as a result of the late delivery of the project, contractors are often penalized for exceeding project delivery date.

2.6.3 Quality performance

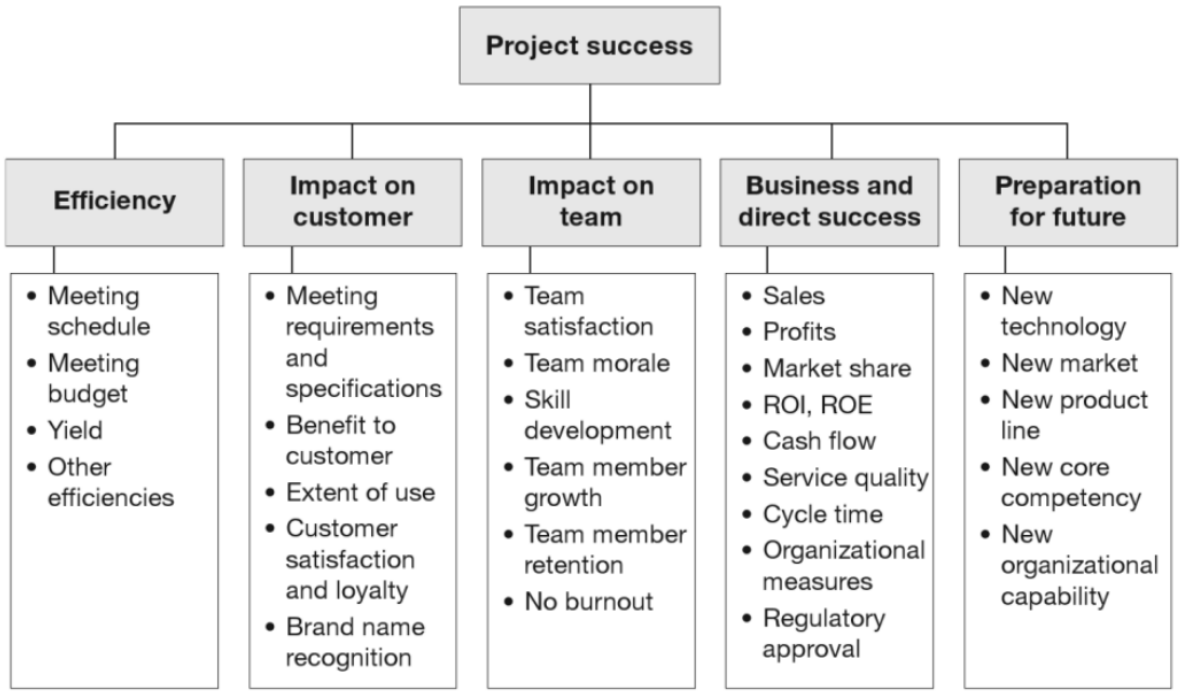
Quality is an intangible soft measurement of project performance. It is anchored on the notion that owners or clients should be satisfied with the completed project and, if the project meets or exceeds their expectations (Azmy, 2012:15). Parfi tt and Sanvido (1993) define quality in the realm of the construction industry as "the totality of features required by a project to conform to the pre-determined requirements." These requirements are clearly spelled, stated and specified in the contractual agreement deduced by all parties to the project and, incorporated into the contract price as much as possible (Shah Ali & Rahmat, 2010:29). This project performance measurement serves to curb the action of contractors who may try to cut corners on quality and quantity to increase profit, or to compensate for losses they are not optimistic about being able to recover.

2.6.4 Health and safety

Apart from meeting time, cost and quality goals and the other measures highlighted earlier, construction experts insist on another aspect in the measurement of project performance in the construction industry, and this is health and safety (Chan & Tam, 2000). Health and safety reflects the general conditions at the construction site that promote the execution and completion of a project without or with a minimum accidents and injuries (Bubshait & Almohawis, 1994). Health and safety is measured primarily by looking at the number of accidents that occur during the project life cycle. This is of paramount importance, considering the fact that construction work is notorious for its dangerous and risky activities throughout the world. The probability of construction worker dying or getting injured is three and two times, respectively, higher than a worker from any other industry (Shah Ali & Rahmat, 2010:30).

Figure 2.4 illustrates a summary of the aspects that measure project performance as proposed by Shenhar and Dvir (2007).

Figure 2.4: Project success criteria



(Source: Shenhar & Dvir, 2007).

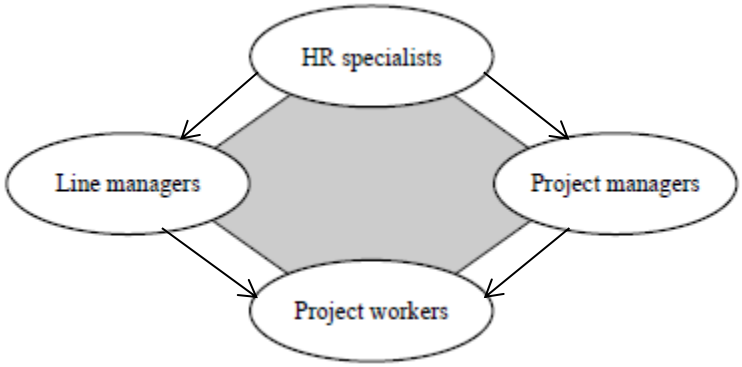
2.7 Overview of High Performance Work Practices

The dynamic and temporary nature of the work practices, policies and processes in the multi-project organisations pose challenges for both the employee and the organization with regard to how HRM should be practiced. HRM practices, policies and processes have to comply with specific requirements of the multi-project organization (Huemann, Keegan & Turner, 2006). In particular, it is not clear in multi-project organisations about who retains formal responsibilities for certain human resource tasks (Bredin & Söderlund, 2011).

Bredin and Söderlund (2011) developed an HR quadriad that can exist in multi-project organisations. The quadriad, as shown in Figure 2.5, identifies four groups involved in HR activities in multi-project environments, namely HR specialists, project managers, project workers (project team) and line managers (financial managers, sales and marketing managers, etcetera.). Other studies argue that the role of

project managers and line managers in the management of HR activities is not clear (Keegan et al., 2011; Turner et al., 2008).

Figure 2.5: The HR quadriad in multi-project organisations



(Source: Bredin & Söderlund, 2011:71).

As shown in Figure 2.5, Bredin and Söderlund (2011:71) suggest that HR success or failure in multi-project organisations is explained by the interplay between HR specialists, project managers, line managers and project workers. However, as shown by the arrows on the diagram, HR specialists regulate, supervise and coordinate HR issues that affect line and project managers whilst both line managers and project managers oversee HR issues that pertain to project workers (Gray & Larson, 2008; Hällsten, 2000).

Meanwhile, in South Africa, Venter (2003:47) points out that there are about eight HR labour legislations that govern and guide the applications HR practices, namely "Labour Relations Act 66 of 1995; Basic Conditions of Employment Act 75 of 1997; Employment Equity Act 55 of 1998; Skills Development Act 97 of 1998; Occupational Health and Safety Act 85 of 1993; Unemployment Insurance Act 63 of 2001; The Compensation for Occupational Injuries and Diseases Act 130 of 1993; and the Broad-based Black Economic Empowerment Act 53 of 2003." The application of HPWPs has to comply with the stipulations and provisions set down in these legislations.

The general working conditions and labour relations in the civil engineering construction industry are regulated by the Basic Conditions of Employment Act (BCEA) and the Bargaining Council for the Civil Engineering Industry (BCCEI), respectively. The Skills Development Act in conjunction with the Skills Development

Levies Act regulates issues regarding the training and development of employees, whereas the Employment Equity Act (EEA) prevents any form of unfair discrimination against any employee (in all racial and gender groups, from black females to white males), and institutes affirmative action measures that seek to redress the historical disadvantages imposed on certain groups in the country during the apartheid era. The Labour Relations Act sets the platform and standards for collective bargaining, strikes, industrial action, lockouts and all other issues between employers and trade unions, or employer organizations and bargaining councils. The section that follows further elaborates the model which the study has adopted as the conceptual framework.

2.7.1 The AMO framework model

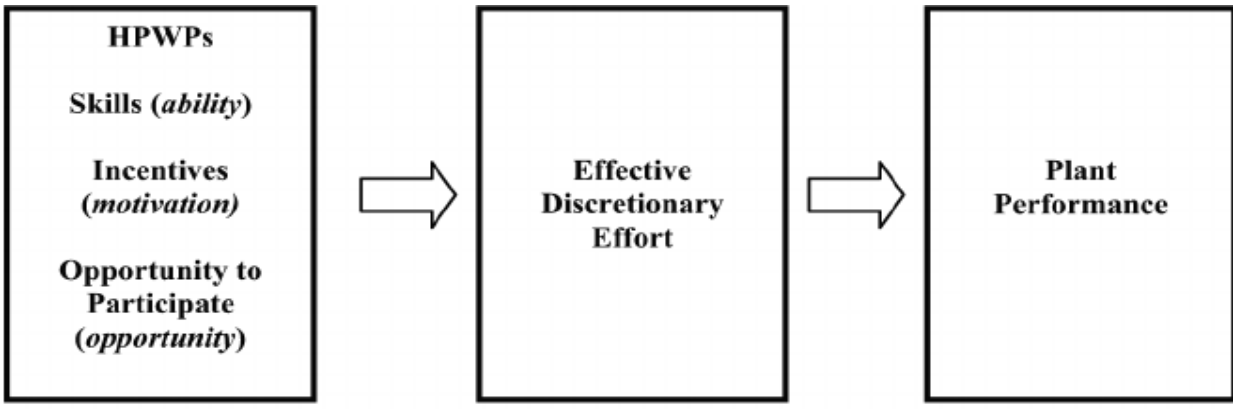
In addition to the project success criteria model proposed by Shenhar and Dvir (2007) as highlighted in Figure 2.4, AMO model was incorporated in this study to identify and explain universal HPWPs' impact on multi-project environments as far as project performance is concerned. The aim of the model was to investigate and explain the fact that HPWPs can help to improve the performance of the organization or plant (Appelbaum et al., 2000). The universal HPWPs, which are the four most commonly referred in many "bundles" and which are the focus of this study are RS, TD, PA and CS.

Comprising three drivers of employee performance, namely Abilities, Motivation and Opportunity, the AMO model of performance defines Ability "as an acquired or natural capacity that enables an individual to perform a particular task successfully." In the domain of HR, ability refers to the set of practices (training and development; recruitment and selection) that focus on increasing abilities, skills and knowledge, designed for ensuring that the employees have the necessary competencies needed for executing their tasks effectively (Sarikwal & Gupta, 2013). Motivation can be defined as "the degree to which an individual wants and chooses to engage in certain specified behaviors" (Kim, Pathak & Werner, 2015). Motivation can be either extrinsic or intrinsic (Minbaeva, 2013; Sarikwal & Gupta, 2013). Intrinsic motivation persuades the employee to have a long-term commitment with the organization whereas

extrinsic motivation relates to factors such as monetary rewards and benefits (Schimansky, 2014). In the discipline of HR, motivation-enhancing practices (such as compensation and performance appraisal) foster employee's effort towards delivering high levels of performance (Demortier, Delobbe & El Akremi., 2014). Opportunity can be defined "as a set of circumstances that makes it possible to do something." In the HR domain, employees' opportunity practices may consist of employee security, sharing information, teamwork and decentralised decision making (McKenna & Beech, 2014:40–42).

The focus of this study is on the first two components of AMO framework, namely Ability and Motivation. These two drivers of employee performance contain HPWPs that are considered universally applicable in all organizational settings, regardless of differences in structure, design and culture. As shown on Figure 2.6, effective deployment of HPWPs triggers employees to engage in positive discretionary behaviors that will enhance performance. Hutchinson (2013) asserts that positive discretionary behavior is concerned with "working beyond the basic requirements, for instance taking additional tasks," which in turn positively affects the performance of the organization.

Figure 2.6 AMO framework model



Source: Appelbaum *et al.* (2000, p. 27)

The following sub-sections of 2.7.1, discuss the Ability and Motivational HPWPs' components of the AMO framework theory that have been considered in this study.

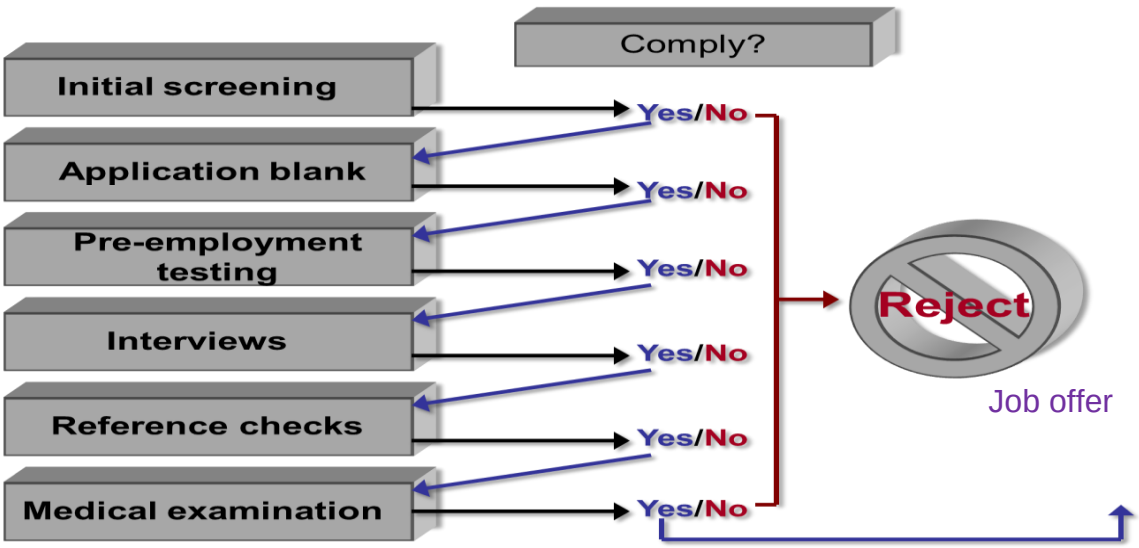
2.7.1.1 Recruitment and selection

Recruitment and selection are related processes. Recruitment is the action of the HRM function which refers to the process of attracting as many as possible, potential applicants for the vacant position whilst selection is the process of "choosing from a pool of applicants, the person most suitable for the job" (Bratton &Gold, 2003; Grobler *et al*., 2011:179)**.** An organization should establish a systematic recruitment and selection process that should be observed consistently whenever the two practices are applied. Figure 2.7 and 2.8 illustrate typical recruitment and selection processes respectively (Grobler *et al*., 2002). Figure 2.7 summarises the sequential steps that should be followed to ensure the availability of a satisfactory pool of applicants. Figure 2.8 depicts in summary the steps in the selection process, for example, after reviewing of the applications, applicants who seem to be qualified for the position are then screened according to the minimum requirements. The process continues until the job is offered to the candidate who complies with all the requirements in each step (Grobler *et al*., 2011:179)**.**

Figure 2.7: The Recruitment Process

(Source: Grobler *et al*., 2002)

Figure 2.8: The steps in the selection process



(Source: Grobler *et al*., 2002)

For a person to be recruited and selected for a job, various techniques are used to test the employee's suitability for the job, namely interviews, assessment tests, etcetera. This approach accentuates employees' organisational commitment and job satisfaction (Wanous, 1992). The aim is to, at a minimum cost, place on the job the best candidate who not only possesses the relevant qualifications, knowledge skills and experience about the job, but who also fits into the organization's corporate culture and resonates with the company's espoused values (Armstrong, 2006).

Huselid (1995) in his review of HRM practices and policies of high performance companies, found that proper application of recruiting and selecting procedures boost employee productivity, increase organizational performance, and contribute in diminishing turnover. This means that when accurate information is provided to potential applicants, only applicants who meet the minimum requirements will apply for the job, and this creates an impression of trustworthiness on the employer's side (Meyer & Allen, 1997). Many authors (Dessler, 2011; Swanepoel, Erasmus & Schenk, 2008) have alluded to the importance of recruitment and selection in driving organisational capacity and competitiveness. It has been established that the provision of quality goods and services owe its origin to the recruitment and selection process adopted by an organization (Chukwu & Igwe, 2012). However, poor application of the recruitment and selection practices poses detrimental effects, blocking the company from achieving its objectives thereby decreasing its competitive edge and market share. High training and development costs; high disputes and disciplinary problems; absenteeism; low productivity; and high turnover are common behaviours that accompany poor application of recruitment and selection practices (Chukwu & Igwe, 2012).

In a study conducted by Ahmed and Briggs (2012), it emerged that companies are not retaining skilled labourers at the same rate as office positions owing to failure to change company's culture and practices to acknowledge that skilled labour positions are just as important as office positions within the organization (Ahmed & Briggs, 2012). In other words, most companies' resources and effort go into the recruitment of office candidates only. Consequently, Ahmed and Briggs (2012) recommend that construction companies should not rely solely on interviews or reference checks to recruit skilled labour, but also apply performance and knowledge tests in order to

improve the workforce retention rate. Also, transparency should be observed in the recruitment and selection process to guarantee the employment of competent workers (Ahmed & Briggs, 2012).

Recruitment can be done internally or externally, using various sources and methods (Grobler *et a*l., 2002). Some of the recruitment methods are: “direct applications, employee referrals, university recruiting, recruitment agencies, advertising, direct mail, internet (e-recruiting) and job posting” (Grobler *et al*., 2002). The choice of the method is affected by two extreme factors: its cost effectiveness and its ability to reach the targeted prospective applicants (Stone, Stone-Romero, & Lukaszewski, 2006; Tong & Sivanand, 2005). External recruitment refers to recruiting from outside the organization, which can be done, for example, by using the media to advertise. HR practitioners will write the advertisement and put it in any chosen news media. Internal recruitment refers to recruiting from within the company’s existing workforce, and this can be done by job posting, which involves posting the available position on organisational communication boards to entice the current workforce to apply (Grobler *et al*., 2002).

South Africa’s labour market is fraught with a shortage of skilled workers whilst unskilled workers are surplus (Coetzee, Botha, Kiley, Truman & Tshilongamulenzhe, 2013:17), thus making enormous challenges on the work of recruitment and selection officers as they resort to relying on the external sources. However, developing recruitment and selection policies in line with the prevailing conventions and the country’s employment legislations, capacitating HR managers and line managers with rigour, honesty and integrity in the implementations of policies will strengthen the recruitment and selection practices of any company (Public Service Commission, 2007).

2.7.1.2 Training and Development

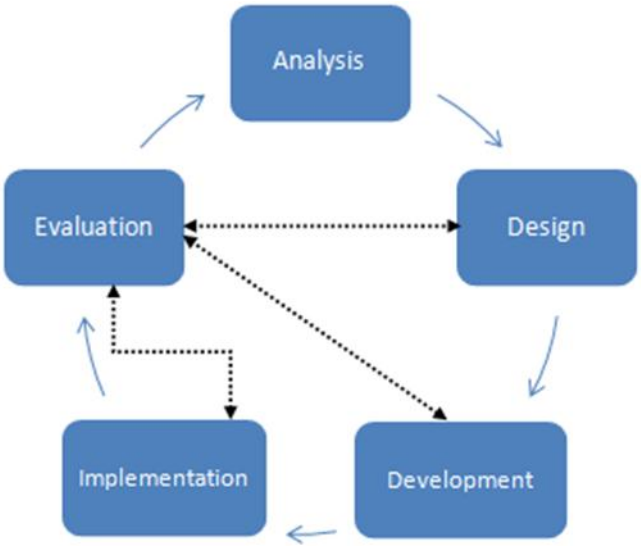
Training and Development are two interrelated, but different concepts as they are applied in the workplace. Training can be defined as the formal and systematic modification of behaviour, attitudes and skills that are critical for successful job performance through learning experiences which can occur through education, instruction, development and planned experience (Armstrong, 2001; Coetzee *et al*.,

2013:202). Development is defined as the “process of growing employees and equipping or preparing them for different better or big opportunities other than those required in the current job” (Noe, Hollenbeck, Gerhart & Wright, 2008). Whilst the main aim of training is focused more on the ability to master and become adept in the performance of a particular skill, development thrust is to maintain highly competent personnel that are abreast of the competitive global market demands (McKenna & Beech, 2014:342; Snell & Bohlander, 2006: 282). This distinction implicitly means that development is mainly directed at senior and managerial employees, focusing on their long term growth whilst training is offered to any employee to whom a training need has been identified to enable them to achieve effective performance in their activity or range of activities (Coetzee *et al*., 2013:202).

Training and development is based on the premise that once employees are hired, they need to be oriented, up-skilled and developed. Training and development is needed to boost performance, for continuous development of human resource and to solve pertinent problems, boost employee morale and to increase performance (Bartel, 1994; Burke & Day, 1986). Training can be carried out at the workplace (on the job training), or out of the workplace (off the job training). When “new and inexperienced employees learn through observing peers or managers performing the job and trying to imitate their behavior,” thus on-the-job training (Noe, et al., 2008: 294) whereas off-the job training “includes any form of training performed away from the employee’s immediate work area” (Grobler, Wärnich, Carrell, Elbert & Hatfield, 2006: 314). The main intent of training and development is to allow "employees to acquire greater competencies that are needed to perform their jobs efficiently and effectively.”

Conducting effective and successful training and development in an organization should follow a systematic process (Coetzee *et al*., 2013). Snell and Bohlander (2007: 284) point out that investment in training that is not systematic and strategic is wastage of resources. Figure 2.9 illustrates Addie’s systematic training cycle adapted by Chan (2010:15).

Figure 2.9: The five main phases of systematic training



(Source: Chan, 2010: 15)

Chan (2010:15) outlines that systematic training as shown in Figure 2.9 , follows the following steps:

I. **Analysis**: This focuses on identifying training needs. Here tasks that should be done are identified, analysed and job duties drawn. This process lists the knowledge, skills and attitudes needed for successful execution of the tasks, which becomes the basis for the design of the training course and learners' learning objectives. These competencies will then be compared with competencies the current employees possess in order to identify their training needs (Coetzee *et al*., 2013).

II. **Design**: This focuses on the formulation of training objectives. The objectives drawn here are based on the training needs identified in the analysis phase. Decisions such as what learners should learn, be taught, the instructional methods and the type of transfer is decided here. An assessment plan to test if the learners have grasped the competencies needed is also drafted here (Erasmus, Loedolff, Mda & Nel, 2015:13).

III. **Development**: The third stage responsible for the organization of the learning materials and strategies. Training materials for learners and instructors such as student handouts, lesson plans, and textbooks are purchased and made available (Erasmus *et al*., 2015:13).

IV. **Implementation**: The fourth stage which is the actual delivery of the training. In this phase the instructor lectures and the learners learn. This is where all objectives and results of the preceding phases are put in practice, for example, material compiled during the development phase is used to implement the decisions made in the design phase (Erasmus *et al*., 2015:13).

V. **Evaluation**: The last step which involves assessing whether intended training has been done. This can be done through summative evaluation. The purpose is to determine if the training course has achieved what it was intended for, and if the trainees have grasped the competencies that ensure effective organisational performance (Coetzee *et al*., 2013).

Different countries have promulgated different legislation to regulate training and development. In South Africa, training and development is guided by the National Qualifications Framework (NQF) Act 67 of 2008**,** Skills Development Act (SDA) No. 97 of 1998 in conjunction with the Skills Development Levies Act (SDL) No. 9 of 1999. The Skills Development Act requires that all training that is implemented by an organization should be aligned to the NQF. The NQF "is a framework on which standards and qualifications, agreed to by education and training stakeholders throughout the country are registered" (Nel, Werner, Haasbroek, Poisat, Sono & Schultz, 2014).

The NQF recognises diverse types of education and training that occur after compulsory schooling. The NQF registered qualifications should meet certain criterion, including being internationally comparable. The SDL stipulates that grants could only be claimed if the organisations implement NQF registered unit standards and qualifications that are offered by accredited and/or registered providers (Coetzee *et al*., 2013:25). The Skills Development Levies Act requires private sector employers with more than 50 employees to contribute one percent of their wages to the National Skills Fund through the South African Revenue Services (SARS) as skill

levies, while public employers must spend at least one percent of their payroll on employee training and development in return for mandatory grants paid back to them quarterly for funding education and training programmes upon “submission of the Workplace Skills Plan (WSP) and Annual Training Report (ATR)” to the organization’s relevant Sector Education and Training Authority (SETA) (Nel, Werner, Haasbroek, Poisat, Sono & Schultz, 2008: 432). Organizations may also recover a large percentage of the levy if they appoint a Skills Development Facilitator (SDF); and if they have implemented training and development that support respective SETA’s Sector Skills Plans (Nel et al, 2008: 432).

A Workplace Skills Plan is a document that describes and outlines the employers’ annual planned training and development of employees whereas the ATR is a document that summarises the actual training and development that has been offered by the employers to their employees in the past 12 months, and which employees received the training. Employers who employ less than 50 employees are obliged to submit an application for mandatory grant upon submitting a simplified WSP and ATR (Coetzee *et al*., 2013:25).

In the construction industry, training and up-skilling of workers is a key factor in boosting construction productivity. However, training of semi-skilled and unskilled workers that take place in the construction industry seldom results in accredited, recognized outcomes. It is largely done to meet the operational requirements of the contractor (Dainty, Green & Bagilhole, 2007). Dainty *et al.*, (2007) also suggest that tasks executed on a project are not static as different projects require diverse skills and expertise. Maloney (1997:49) discovers that construction organization must address issues of the availability of a skilled workforce. Research has indicated that training employees in diverse skills as a form of investment can result in desirable firm performance (Barak, Maymon & Harel, 1999). Fryer (1990) concur that there is a sudden appreciation of the need to train project team members on skills and competencies (team work skills) that will enable them to function effectively in team work procedures during the construction project production processes.

Training is one of the most important HRM functions (Grobler *et al*., 2002). At the company level, training and development prospects must be reflected in the

company's training policy and plan. In studies carried out by Castaneda, Tucker and Haas (2005:799), lack of training was pointed as a contributing factor to the shortage of skilled workforce in the construction sector, and this has exerted a negative impact on project performance (Castaneda *et al*., 2005:799). In this regard, better-educated workers, who would receive higher compensation and deliver improved results, have been proposed to address the problem of skill shortages (Ramlall, 2003).

2.7.1.3 Performance Appraisal

HR performance appraisal can be defined "as a process of systematically evaluating performance of the companies' personnel and providing feedback on the measured performance with the aim of making adjustments" (Dransfield, 2000: 71). Sofijanova (2000:3) defines performance appraisal as the assessment of current or past employee's performance against established standards of performance. This means that if the behaviour of an individual departs significantly from the desired, either positively or negatively, further actions should be taken to improve the actual behaviour (Minbaeva, 2005). Such actions can entail training or transferring the employee or motivate the employee for better performance (Noe *et al*., 2015). Beardwell and Thompson (2014:431) point out that effective performance appraisal should contribute more enormously to the success of the organisation by defining the direction for training and development of employees, and feeding the reward structures. Grobler *et al*., (2011:293) define performance appraisal as "the on-going process of evaluating and managing both the behaviour and outcomes in the workplace". Performance appraisal is a sub set of a broader process of performance management system. Performance management as defined by Aguinis (2013:2) "is a continuous process of identifying, measuring, and developing the performance of individuals and teams and ensuring performance is congruent with the strategic goals of the organisation." Research by ACAS as cited in Foot and Hook (2011: 259) override all the above definitions by comprehensively defining performance appraisal as the process of "regularly recording assessment of an employee's performance, potential and development needs whilst taking an overall view of work content, loads and volume, by looking back on what has been achieved during the reporting period and agree on objectives for the next period."

Next, performance appraisals are both evaluative and developmental, and Carrell, Elbert, Hatfield, Grobler, Marx, and van der Schyff (1998) deduce purposes of performance appraisals as:

I. To upgrade "the performance of employees by reviewing how they are meeting their set objectives" and be rewarded for outstanding work;
II. To "enhance the potential of employees, by identifying areas in them that require development and training;"
III. To "increase the motivation of employees" and
IV. To "determine who should receive promotions, be retained, retrenched, rotated," etcetera. (Grobler *et al*., 2002:298; Beardwell & Thompson, 2014:432).

Performance appraisal that is result-oriented is positively related to organizational performance (Delery & Doty, 1996) whilst performance that incorporate the feedback system is related to enhanced individual performance, especially to the personnel identified as low performers (Walker & Smither, 1999; Johnson & Ferstl, 1999). Performance appraisal that is result-oriented can be linked to outcomes such as compensation, promotion, or other rewards such as punishment.

Grobler *et al*., (2002:297-299) proposes that effective performance appraisal should have an established performance measurement criteria, and follow a systematic process. The three most recognised performance criteria are: "trait-based criteria; behaviour-based criteria; and the results or outcome-based criteria." The trait-based criterion focuses "on the personal characteristics of the employee, for example, loyalty towards the organisation and creativity in completing tasks", etcetera. The behaviour-based criterion focuses "on the behaviour of the employee that leads to the successful completion of activities", for example, "leadership, determination, team cooperation", etcetera. Finally, the results or outcome-based criterion focuses on the end-result of the job (Grobler *et al*., 2002:297-299).

With regard to the need for the performance appraisal to follow a systematic process, Grobler *et al*., (2002:298-299) suggest a simple series of steps:

I. Establish performance targets and goals
II. Select a suitable appraisal method

III. Train managers on how to use the method
IV. Discuss the appraisal methods with the workers prior to the commencement of the review
V. Review as per job requirements, and as stated by performance targets
VI. Discuss the appraisal feedback with the appraised workers
VII. Establish future appraisal performance targets (Grobler *et al*., 2002:298-299).

Furthermore, the method chosen for performance appraisals influence the extent of performance effectiveness. Grobler *et al*., (2002:302) places the different methods of performance appraisal into four genres, namely "category rating methods, comparative methods, narrative methods, and behavioural/ objective methods." There is no best method, therefore, the company should select the method that enables it to achieve its employees' and organisation's objectives. Amos, Ristow, Ristow and Pearse (2012:293) point out that it is the responsibility of organisations to consider which method of performance appraisal that best provide valid and reliable performance information when gathering performance data.

There is some argument with regard to who has formal responsibility to carry out the performance appraisal in the multi-project environments. Whilst project managers, because of their day-to-day contact with project workers, are believed to have more influence, line managers have been widely agreed to have the formal responsibility to conduct performance appraisal (Bredin & Söderlund, 2011; Keegan *et al*., 2011). In what seemed to buttress the above researchers findings, Roelofs (2012:10) develop a responsibility distribution based on the past literature reviewed. The perception was that the role with the highest number of articles supporting it was the role that has a more recognized formal responsibility to regulate HR activity of performance appraisal in the multi-project organisations. The results revealed that line managers, followed by project managers are the people with the mandate to conduct the performance appraisal.

2.7.1.4 Compensation Systems

Altarawmneh and Al-Kilani (2010) noted that employees' motivation is boosted when financial rewards "are directly tied to performance." Compensation and performance

were found to be positively related, posing a significant correlation (Fulmer, Gerhart & Scott, 2003; Teseema & Soeters, 2006). Grobler *et al*., (2011:401-402), define compensation as reference to both extrinsic rewards and intrinsic rewards such as salary and benefits, and personal goals, autonomy and more challenging job opportunities. A good compensation system should include both intrinsic and extrinsic rewards that are comparable to the market (Grobler *et al*., 2011). Extrinsic rewards (financial) are divided into monetary rewards (direct payments) and benefits (indirect payments). Monetary benefits can comprise hourly "wage, salary, bonuses, commissions, pay incentives" etcetera. Whilst benefits consist of "insurance, retirement, paid holidays, paid public holidays," etcetera. Intrinsic rewards (non-financial) cover "recognition, promotion opportunities, working conditions, interesting work, training opportunities," etcetera. (Grobler *et al*., 2011:401). Wages and benefits should be fairly distributed to achieve organizational competitive purposes (Grobler *et al*., 2011).

The value of compensation is anchored on the notion that whilst it is known that it is impossible for employers to buy workers' commitment and loyalty, it is true that they should reward employees for the value they create for the organisation (Armstrong in Beardwell & Thompson, 2014:463). Perkins and White (2011) concur with Armstrong assertion by coining what is known as 'total reward' proposition that states that compensation should go "beyond those specified in the employment contract to rewarding discretionary effort."

The purpose of compensation is to satisfy certain objectives. Grobler *et al*., (2011:402 – 405) listed the objectives of compensations as to:

I. Attract employees
II. Retain employees
III. Motivate employees
IV. Comply with the law

Meanwhile, research has confirmed that "higher pay, greater pay growth" and other rewards are "correlated with higher performance and lower turnover" (Combs & Liu, 2006; Haines, Victory, Jalette & Larose, 2010; Nyberg, 2010; Way, 2002). In a meta-analysis carried out by Combs and Liu (2006), the influence level of compensation

on employee performance was found to be positively significant than that of other tested HR practices. The preceding empirical findings were also echoed by Nyberg (2010) in his longitudinal study. The conclusion was that there is a positive relationship between employee performance and remuneration increases, which results in improved retention of high performing employees (Nyberg, 2010).

Even though other studies found a less positive relationship of compensation on firm performance (Haines*et al*., 2010:240), Milkovich and Boudreau (1998) revealed a significant influence on firm performance that is exerted by incentive-based compensation. Also, Kazaz and Ulubeyli (2007: 2132) found that in the construction sector in which 82 firms were surveyed, socio-psychological factors, although gaining momentum, pose less influence on productivity than monetary factors.

2.8 Overview of HRM in the construction industry

HRM practices are famous with many researchers, citing them as holding affirmative relationship in ensuring organizational success in the past decade and beyond (Dyer & Reeves, 1995; Khan & Rasheed, 2015:436). Masood (2010) reiterated that a complete structure in an organisation, as far as HRM is concerned constitutes HRM factors such as “recruitment and selection, training and development, performance appraisal, and compensation system.” These four HPWPs are HRM practices that have been referred to as the four, core generic functions of HRM, and are designed to impact performance of employees across all organizational levels (Devanna, Fombrun & Tichy, 1984: 41). The main objective behind effective management of the human resources is to motivate the employees so that they can be more productive in their duties.

Even though some suggest that HRM is not a central issue in the construction industry, due to its influence on aspects such as time and cost, it will, to a certain degree affect the outcome of the construction projects. Loosemore *et al*., (2003) asserted that “human resources account for the highest costs in most construction projects.” Bredin (2006: 4) in a study that looked at aspects that pose challenges in the management of project-based organizations found that one such important challenge has to do with HRM. Such challenges include throw-away personnel policies, reliance on the competence and knowledge of the employees, “high

pressured work environment that will leave little space for formal training or staff development, and a lack of incentives for human resource development" (Hobday, 2000: 885; March, 1995:434). This is because "projectification" of the work environment necessitates a complete transformation in the management of personnel as compared to a traditional work environment.

Other researchers (Allen & Katz, 1995; Eskerod, 1998; Engwall & Jerbrant, 2003) point to changes in career structures, staffing and resource allocation problems. Engwall, Steinthorsson and Soderholm (2003:130) assert that the transformation of an organisation to a project-based results in HRM being affected.

Moreover, the construction industry is characterised by fixed term work and casualised forms of labour and subcontracting of work in an endeavour by many companies to extricate themselves of many direct employment obligations (Beardsworth, Keil, Bresne & Bryman, 1988). However, contractual relationships created by subcontractors need to be well managed to ensure effective acquisition, organisation and deployment of the human resources, and this has taken a centre stage of discussion as far as literature of HRM in the construction industry is concerned (Dainty *et al*., 2007; Dainty & Loosemore, 2012). With reference to international construction projects, it is of paramount importance for construction organisations to strive to, through both formal and informal contracts of employment, fulfil employees' career expectations as this goes a long way in preventing the companies from losing their best staff to their competitors (Dainty, Bagilhole & Neale, 2000).

"Atkinson's model of labour flexibility", classified construction workers into two classes: the first one being permanent employees (core employees) who occupy roles such as "professional engineers, and commercial, building and construction management roles." The peripheral workers, on the other hand, are skilled and semi-skilled personnel in areas of "craft work, operatives, labourers and administrators, as well as highly qualified specialist professional staff" (Dainty *et al*., 2000).

2.9 An empirical review of HRM on project performance

There is resounding divergence among researchers with regard to the impact of HRM on project performance. One group of researchers (Belout & Gauvreau, 2004; Pinto & Prescott, 1988) found no influence of HRM on project performance. On the other hand, Chan, Ho and Tam (2001), Khan and Rasheed (2015), Papke-Shields, Beise and Quan (2010) and Popaitoon and Siengthai (2014) found a relative positive HRM influence on project performance, and suggested that more research need to be undertaken to prove this. Perhaps the disagreement owes to the fact that the researchers studied different HRM practices without focusing more on core HRM practices that are proven to impose significant impact on organizational success.

The personnel factor (meaning HRM) has a peripheral effect on project performance (Pinto & Prescott, 1988). Belout's (1998) confirmed that project management research was more focused on technical aspects of projects such as "the impact of scope, budgets, time and quality on project success." As a result, the study recommended further research on the social-cultural aspects to address two fundamental questions: "(1) is personnel a significant factor for project's success? And (2) do the organizational structures and the project life cycles have an intervening effect on the relation among the independent variables and the project's success?" This is perhaps owing to the fact that HRM has been considered as a core element of "project management by the PMBoK" (Kerzner, 2009; Meredith & Mantel, 2012; PMI, 2008; Zwikael, 2009). For example, a study by Zwikael (2009:103) in different industries or settings revealed that HRM is one of the ten knowledge areas of project management contributing significantly to project success, coming fourth after "time, risk and scope project management knowledge areas."

Belout and Gauvreau (2004:1–11) conducted research modelled on Pinto and Prescott's (1988) study. Their findings conduced to the following guiding propositions: "(i) the Personnel factor will have a significant impact on the project's success; (ii) the relationship between the independent variables and project success in the model will be affected; (iii) Project structure has a moderating effect on the relationship between the independent variables and project success by the four project life cycle stages; and (iv) Project activity sectors will have a moderating effect on the relationship between the independent variables and project success."

Belout and Gauvreau (2004:1–11) found that despite a “relationship between project success and the personnel factor,” the correlation analysis showed that the “personnel factor does not have a significant impact on project success” (Pinto & Prescott, 1988).

Something of a stream of research was published in 2007. Pollack (2007) reviewed secondary data on project management that focused on “hard” versus “soft” paradigms. Paradigms in this context are thinking tendencies (Pollack, 2007). The terms hard or soft are used to characterize the “technical paradigm” (hard) or to “refer to a vague focus on people or intangibles (soft)” (Crawford & Pollack, 2004:645). The results of the research confirm a significant association between the “technical paradigm” (hard) and project management, with a gradual acceptance of the human paradigm (soft). Huemann, Keegan and Turner (2007:315–323) similarly acknowledge a transition from hard to soft project management, but point out that the literature about HRM and project management was still limited. It is also argued that due to “specific characteristics of project- based organizations, such as the dynamic nature of the work environment and the temporary nature of project work process,” there are challenges for HRM (Huemann et al., 2007). This study of HRM in relation to projects was based on secondary literature. Finally, the review highlights specific requirements for “HRM in project-oriented companies, which are:

I. Contextualisation of “management by projects as an organizational strategy;”
II. “Consideration of “the temporary nature projects in configuring HR;”
III. Understanding that “project-based companies have dynamic boundaries and operate under dynamic context;”
IV. Understanding challenges such as multi-resource allocation and role conflict at an individual level that arise as a result of project-portfolio resource and role demands (Eskerod, 1998; Rau & Hyland, 2005; Zika-Viktorsson *et al*., 2003);
V. Being equipped with specific skills and competencies in order to successfully work with others in executing projects.

Furthermore, Slevin and Pinto’s (2007) findings showed recognition of the importance of teams, a move that can be dubbed as a “shift toward a softer HRM approach in project management.” The purpose of the study was to give a wide

outlook of important behavioural issues affecting effective project management. This was achieved by interviewing practicing project managers and scanning a variety of scholarly articles and journals. The findings confirmed that the primary purpose of HRM is to fulfil the needs of functional managers' activities, but the study suggested the adoption of HR practices that promote successful functioning of project teams. The findings affirm Hueman *et al*., (2007) recommendations.

Turner *et al*., (2008) explored the role of HRM practices in the management of employee well-being and discovered that good caring for the employees is not up to the expected standard in the project-based companies. Improving the well-being of employees by providing them with career development opportunities, for example, has been claimed to contribute substantially to making project management attractive as a career.

Hueman (2010) found that HRM in project-oriented companies must change from an administrative function to a proactive business function supporting project-oriented management. The proactive business functions include processes such as assigning and dispersing project personnel to a project, career and incentives systems planning. The administrative function was painted to be passive and reactive to project management needs.

Naqvi *et al*., (2011) executed a research in which data was collected in a cross sectional manner from "70 heterogeneous IT projects in 24 different software houses," and discovered that quality performance monitoring has a positive correlation with project success. The study emphasized that project managers are challenged to use rational performance monitoring techniques constructively in order to direct team effort towards the accomplishment of the projects within budget (Delery & Doty, 1996). This means that if the performance management tools are applied inconsistently or misused could have a detrimental effect on the motivation of team which will in turn impact negatively on project performance. Papke-Shields *et al*., (2010) also revealed a positive correlation of HRM on project management among other knowledge areas of project management such as cost, time and communication.

Finally, Popaitoon and Siengthai (2014) focused on the relationship between “HRM practices, the project team's knowledge absorptive capacity (ACAP) and project performance in project-oriented companies (POCs),” and discovered that HRM practices have moderating effects on project “team's knowledge ACAP on project performance, in particular of potential ACAP on long-run project.” It has been discovered that HR, particularly through training where by employees’ knowledge, attitudes and skills is developed through learning experiences, objectives of a project can be achieved (Pournader, Tabassi & Baloh, 2015) and thus strengthen the “relationship between a project team's knowledge absorptive capacity and project performance in the short and long run.” In addition, whilst Khan and Rasheed (2015) found a positive relationship between HRM and project success, training and development revealed little effect on project performance.

2.10 Summary

In a nutshell, the following findings can be deduced from the literature reviewed in this chapter:

I. Detailed study of HRM in the project management field is still incomplete to give a final judgment on its significance in the project management, particularly as to which practices pose significant impact on project performance (Belout & Gauvreau, 2004; Davis; 2014; Huemann *et al*., 2007; Pournader, Tabassi & Baloh, 2015; Khan & Rasheed, 2015:435; Verburg, Bosch-Sijtsema & Vartiainen, 2012).

II. Where HRM has been studied it focused mainly on organizational performance, and less on project management (Belout & Gauvrea, 2004:10; Huselid, 1995:635; Masood, 2010:1; Nukić & Šuvak, 2013:663).

III. Where studies concentrated on HRM in the project management field, most of it investigated the management of single projects and little focused on the individual HPWPs on project performance (Ghatehorde & Chhinzer, 2009:37; Patanakul & Milosevic, 2008).

These findings are significant justifications and relevant for the current study. The next chapter discusses the research design and methodology adopted to achieve research objectives of this study.

CHAPTER 3: RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

Mouton (1996:107) defines research design “as a set of guidelines and instructions that are followed in addressing the research problem of a study to enable the anticipation of what the appropriate research should be so as to maximise the validity and reliability” of the findings, analysis, conclusions and theory formulation. In simple terms, research design is a “plan according to which research subjects (participants/ respondents) are obtained and information collected from them” (Welman, Kruger & Mitchell, 2009: 46). Therefore, erroneous research design will yield invalid and unreliable results. This chapter describes the process and steps followed to arrive at the conclusions drawn from the research problem of the current study.

In contrast to research design, research methodology is focused on the research process, the tools and procedures to be used in conducting a study (Leedy & Ormrod, 2013: 74-77). Carter and Little (2007:1317) describe research methodology as an approach that justifies methods, which produce data and analyses it, and methods that produce knowledge. In simple terms, it outlines the collection and sampling tools.

The purpose of this chapter was to describe the research design and methodology that was applied in this study to address the following research objectives:

I. To investigate the relationship between the four HPWPs and project performance in the construction companies;
II. To establish how well the organizations have performed as a result of the application of HPWPs;
III. To ascertain how the project team members and some line staff perceive HPWPs in their organizations; and
IV. To provide recommendations with regard to the relationship between HPWPs and project performance.

To address the objectives of this study, a questionnaire-survey methodology was employed, which is a popular survey instrument used if the research adopts positivism paradigm. As a result, this chapter discussed the positivist research paradigm that was adopted in this study; justified the questionnaire-survey methodology that was used to collect data; discussed the design of the questionnaire; research population, sampling techniques as well as the descriptive and statistical methods that was used to interpret and analyse collected data. Moreover, this chapter proceeded with a discussion of data validity, data reliability, research limitations, and delineation of the study as well as ethical precautions that were upheld in this study.

3.2 Positivist research paradigm

This study adopted a positivism philosophy since data collection strategy is quantitative, scientific, measurable and, free from values and perceptions influence. The paradigm was used in this study for its strength in terms of precision, control and objectivity. In this regard, statistical analysis eliminates the need for intuitive interpretation (Gratton & Jones, 2010:25). Intuitive interpretation of data is popular with interpretive research paradigm (Saunders *et al*., (2013). Denscombe (2008:14) posits that positivism is a social research approach that applies natural science model in investigating social phenomena. This means that human beings are seen as a phenomenon that can be studied scientifically to produce objective results (Babbie, 2011:35). Scientific in this sense means that research should be limited to only objectively observable and measurable objects (Welman *et al.,* 2009:6). Observation means valid evidence obtained through any of the five human senses.

The main objective of this study was to determine the impact of the four HPWPs on project performance in selected construction companies in Cape Town, South Africa. Thus, through administering questionnaires to employees who work as project team members and line staff in the selected five construction companies, the study assumed the role of the observer in a natural setting. Curtner-Smith (2002:38), Gratton and Jones (2010:25) and Saunders et al. (2013), the positivist approach uses quantitative methods to gather measurable, numerical data, and that the qualitative methods of data collection will not fit into this category. This study adopted a quantitative method of generating data through the use of a structured

questionnaire where respondents were required to provide numerical responses to a structured series of questions. Leedy and Ormrod (2013:270) describe the quantitative research approach as a logical and systematically structured process that requires respondents to provide numerical answers in a questionnaire. It involves the quantifying of concepts. In contrast, the qualitative research approach is not numerically based and does not require the quantification of concepts.

Quantitative research focuses on establishing the correlation between research variables (Creswell, 2005:52). In this study there was a need to compare and contrast the relationship between the four HPWPs and project performance. Creswell (2005) defines correlation designs as “procedures in quantitative research in which investigators measure the degree of association (or relationship) between two or more variables using the statistical procedure of correlation analysis.” Leedy and Ormrod (2013) warn that “although correlation analysis can determine the direction and strength of the relationship between variables, it does not necessarily indicate causation.”

3.3 Research population and sampling technique

3.3.1 Population

A population is a group of individual persons, objects, or items from which samples are taken for measurement (Leedy & Ormrod, 2013:206). The target population for this study consisted of the employees of construction organizations in Cape Town, South Africa. The term construction organization refers to any registered company engaging in any enterprise from simple building to complex infrastructural development projects. The list of all construction organisations is available in the business directory, which lists all companies offering construction services in South Africa. Statistically, the list has about 395 companies offering construction work and services in the Western Cape, but does not reveal the number of construction companies in Cape Town.

3.3.2 Sampling

Sampling involves selecting some elements from a population that represents a target population (Leedy & Ormrod, 2013:206). The term population or sampling frame does not necessarily refer to people only, but also to objects or places. The

main distinction between a population and a sample is that the former refers to the entire group of persons or research subjects under study whereas the later refers to only collecting information from some members of the population (Leedy & Ormrod, 2013:215; Saunder*et al*., 2013). The following are reasons for using a sample instead of a population: time constraints; inaccessibility to the entire population; and financial constraints.

The sample for this study was 70 employees drawn from the 5 selected construction organisations in Cape Town, South Africa. Each organization was expected to provide between 10 and 15 employees to complete the questionnaires. The study participants comprised employees who worked as project team members and other line staff such as HR officers, financial managers etcetera, who were involved or had knowledge in the running of the projects in the organizations. This means that the respondents were drawn from two groups of employees, namely project team members that comprised project managers, engineers, architects, contractors and construction site managers. This group of employees had direct involvement in the execution of projects. The other group was the line staffs who were HR officers, financial managers, marketing managers and administrative staff etcetera. This group was perceived to be indirectly involved in the running of projects, but had detailed documents, knowledge and information pertaining to projects and the staff of the organisations.

The five organizations under study were personally visited. Prior arrangements were made with the administration to determine a suitable time for the handover and collection of questionnaires. The questionnaires were handed over to a contact person such as the HR manager, who undertook to ensure that the questionnaires were properly administered and collected after completion.

This study employed both probability and non-probability sampling procedures. In probability sampling, each unit in the population has a fair and equal chance of being included in the sample, whereas in non-probability sampling, the sample is not representative of the population because the selection procedure favours some population units over others (Leedy & Ormrod, 2013:219).

In this study, convenience sampling, which is an example of non-probability sampling, was used for the selection of five (5) construction organizations in Cape Town. Convenience sampling makes it relatively easy and convenient to collect data, thus reducing travel time and costs (Leedy & Ormrod, 2013:219; Saunders et al., 2013). Hence, only five construction organizations that agreed to allow the study to be carried out among their employees were included in the sample.

Stratified sampling technique, a probability sampling procedure was employed in the selection of the respondents to complete the questionnaire. There were two strata from which respondents were drawn, namely employees who were project team members and the line staff. The project team members' category consisted of workers who worked as project managers, engineers, architects, designers, quantity surveyors and contractors whereas the line staff consisted of workers who worked as financial managers, marketing managers, HR managers, administrative staff, etcetera. (Bredin & Söderlund , 2011). According to Bredin and Söderlund (2011), these workers all play a role in the regulation of HR activities in multi-project organizations. The selection of respondents from within each stratum followed a judgemental sampling procedure. Judgement sampling is used when there is a need to gain expert perceptions from people who are believed to be experts within the industry (Saunders et al., 2013). In this study, the judgement sampling procedure ensured that only respondents who had the knowledge of the variables investigated in this study became part of the sample.

3.4 Data collection method and design

The study used a structured questionnaire to collect data. Monette, Sullivan and DeJong (2011:164) define a questionnaire as a survey research method used to collect data in which there are "recorded questions that people respond to directly on the questionnaire without the help of the interviewer." Questionnaires carry with them several advantages and disadvantages as research instruments. Some of the advantages as put across by Wilkinson and Birmingham (2003:39) are:

I. Many people know about a questionnaire.
II. Participants can answer the questionnaires "at their own convenience," while at the same time allowing them "to think about their answers."

III. There is an “opportunity to explain the purpose of the study and meaning of some items” in the questionnaire that may be not clear, thus building rapport.
IV. Questionnaires are useful in showing relationships with data that is easily quantifiable.

The following can be identified as the disadvantages of questionnaires: they provide low response rate, and that they require the person administering the study to provide personal contact and make follow-ups in order to maximise response rate (Best & Kahn, 2006:313; Muijs, 2011:38, 39; Wilkinson & Birmingham, 2003:39).

In order to be able to compare results with previous studies, a questionnaire developed by Singh (2004) and Qureshi and Ramay (2000) was used for the section which measured the four HPWPs. This questionnaire was adjusted to suit this study based on the existing literature. Items to measure project performance were adopted from the five dimensions of project performance proposed by Shenhar and Dvir as cited in Serrador and Turner (2014:76). Again, this section was adjusted to suit this study based on the existing literature, for example, health and safety was added as the sixth dimension.

The reason for the selection of the questionnaire instead of conducting interviews was because this study was quantitative in nature and focused on finding the “relationship between variables” (Brayman & Bell, 2007). This study examined the relationship between the four HPWPs and project performance.

The structured questionnaire consisted of 3 sections. Section A was the demographics which captured respondents’ information with regard to gender, age, educational qualifications, number of years of service, and job position. Section B consisted of statements that measured project performance. A five dimension of project performance proposed by Shenhar and Dvir as cited in Serrador and Turner (2014:76) was used. Health and safety was the sixth added dimension. This section consisted of eight item statements “measured on 5- point likert scale, ranging from strongly disagree to strongly agree, with (1) representing strongly disagree and (5) strongly agree.” Section C measured the perceptions of participants about the four HPWPs. This section consisted of 20 items measured on 5- point likert scale, ranging from strongly disagree (1) to strongly agree (5).

3.5 Data analysis and measurement

Marshall and Rossman (1999:150) define data analysis “as the process of putting order, structure and meaning to the collected data.” The word “data” in the above refers to information that will be collected, organised and recorded in a systematic way to enable the reader to interpret the information correctly (Antonius, 2003:2). In this regard, it has been posited that data analysis is the application of deductive and inductive logic to the research (Best & Khan, 2006:354).

Therefore since this study focused on finding the relationship between HPWPs and project performance, descriptive and inferential statistics computed using the “Statistical Software Package for Social Sciences (SPSS),” version 24 was used for analysing data numerically. Descriptive statistics was used to find the “frequency of the data and the minimum and maximum range of the data” (Durrheim, 2002). It also assisted in the provision of “a concise description of the quantitative data” (Kaplan & Saccuzzo, 2001). Graphs and charts were indicating “the graphical representation of all the variables, for example, the bell curved shapes of the data in histogram verify that the data is normally distributed.” Through descriptive data, “means, standard deviations and reliabilities can be calculated for the sample, predictors and criteria.” “Means represent the average response value and standard deviations show the degree of variance or distance away from the mean” (Durrheim, 2002).

In terms of inferential statistics, correlations were calculated to determine the relationship between the variables (Kaplan & Saccuzzo, 2001). Correlation coefficient (r) or (p) was used for significance test, which measures the strength of association between two variables (Bailey, 1987; Gekoski, 1964). This “correlation coefficient is also popularly known as Pearson product-moment correlation coefficient” (Cronbach, 1970). In this study, the variables comprised the four HPWPs (independent variables) and Project Performance (dependent variable). The two variables if computed on a pie chart with X and Y -axis, the X axis contains the independent variable whilst the Y axis exhibits the dependent variable. In this regard r=1 or p=1 indicates a perfect positive relationship whilst r=-1 or p=-1 indicates a perfect negative relationship, and r or p=0 means zero linear relationship (Saunders *et al*., 2013). “The sign of the correlation coefficient indicates the direction of the relationship” (Saunders *et al*., 2013). This means that when the value of r or p is

positive, there “is a positive relationship between the variables, and when the value of r or p is negative, there is a negative relationship between the variables” (Willemse & Nyelisani, 2015:132). However, the “strength of the association between the variables” is not affected by the sign of the correlation coefficient (Willemse & Nyelisani, 2015:132). This means, for example, if r or p=0.85 and r or p=-0.85, the two are equal in strength, regardless of the direction of relationship. Similarly, a correlation of -0.95 is stronger than a correlation of +0.45. This study attempted to “determine if there was a positive or negative relationship” between the four HPWPs and project performance, and the strength of the relationship.

3.6 Data validity

Validity is concerned with whether the research instruments used in the research or the research strategy measures what it is supposed to measure to achieve the research aims and objectives (Gray, 2009: 155). To ensure validity, research aims, research questions, research objectives and the design of the questionnaire were aligned. The section of the questionnaire which measured the HPWPs for the study was taken from Singh (2004); and Qureshi and Ramay (2000). They studied the “relationship between human resource practices on employee performance.” A few adjustments were made from the existing literature to suit this study. Again, the section of the questionnaire which measured project performance was designed in accordance with the widely recognised measures of project performance. As noted earlier in Figure 2.4, components of a five dimension model developed by Shenhar and Dvir as cited in Serrador and Turner (2014:76) were used as measures of project performance. To suit this study, health and safety dimension was added as the sixth. This is because health and safety has been recognised by many authors as an additional measure of project performance on construction projects (Chan & Tam, 2000). This is done on the basis that construction work is famous for its dangerous and risky activities throughout the world and the need for fewer accidents in these sites (Bubshait & Almohawis, 1994).

Moreover, advice was sought from experienced and expert professionals in HRM and project management field to confirm if the study was conducted in the relevant industry. The construction industry was widely recognised by many researchers and professionals as the project based, multi-project environment (Hashim *et al*.,

2012:21; Engwall & Sjo¨gren, 2003; Elonen &Artto, 2003; Kaulio, 2008:338; Meredith & Mantel, 2012).These organizations are in other cases also referred to as “projectified” organizations (Midler, 1995), the “project-based organizations” (Hobday, 2000) or the project-oriented organizations (Huemann*et al*., 2007). Finally, of course, firm performance depends on many factors, but as elaborated in the introduction chapter, HRM activities are proven to have a significant impact on business result.

3.7 Data Reliability

Reliability is the consistency or uniformity of the research instruments or approach to find out whether the study assessment procedure will yield the same results if repeated every time (Brynard & Hanekom, 2006: 48; Gray, 2009:158; Powell & Connaway, 2004:43). To ensure reliability, a pilot study was conducted using ten randomly selected project team members or line staff from a selected construction company. The respondents who participated in the pilot study did not form part of the sample. The purpose of the pilot study was to “identify ambiguities or difficult wording in the instructions and the survey questions.” The pilot study was successfully completed by the respondents, only revealing a shortcoming of two long statements which the respondents found difficult to understand. They wrote on the questionnaire against the statements that they could not understand what was being asked of them. This shortcoming was corrected, and the questionnaire was handed back to the respondents for completion. They all expressed their understanding of the statements concerned and endorsed conciseness of the questionnaire.

Moreover, Cronbach alpha coefficient was used to measure reliability (Drucker-Godard, Ehlinger & Grenier, 2001:203). “Cronbach alpha coefficient is widely used as a reliable measure of reliability” (Sekaran &Bougie, 2010:162). Cronbach's Alpha coefficient for all the 28 items in the questionnaire was 0.848. (See Appendix D) Alone, the 20 independent variable statements had a cronbach’s alpha of 0.883 whereas the 8 dependent variable statements scored a cronbach’s alpha coefficient of 0.761 (See Appendix D). As a result, the questionnaire was deemed reliable and consistent as a Cronbach's Alpha Coefficient that is more than 0.70 is considered as a good estimate of internal consistency and reliability. “If the items are strongly

correlated with each other the Alpha coefficient will be close to one whereas if the items are poorly correlated, the alpha coefficient will be close to zero."

3.8 Limitations of the research

Due to time, accessibility and funding problems the study focused on the 5 selected construction multi-project organizations in Cape Town, South Africa. As a result, the results of this study could not be generalised to other countries as factors such as "regulations, culture, values, norms and ideas" which guide the type of employment relations between employees and the companies can vary significantly between nations. For example, construction workers in Scandinavia have better job security, and are highly salaried when compared with their counterparts in "China and India" (Loosemore *et al*., 2003). More so, in countries such as UK, Australia and USA which have cultural similarities, there exist divergent employment practices (Loosemore *et al*., 2003).

3.9 Delineation of the study

This study only focused on the impact of HPWPs on project performance in the selected construction companies in Cape Town, South Africa.

3.10 Ethical Considerations

Mouton (2001:238) defines ethics in relation to the "ethics of science as concerns about what is wrong and what is right when conducting research." Saunders *et al*., (2013:43) supported Mouton's opinion by explaining that all research subjects have ethical rights that may comprise of "right to confidentiality, right to be consulted and right to give or withhold consent" and the need for the institution to establish an "Ethics Committee." The most important aspects related to ethics according to Smith (2008) are informed consent, the issue of deception, "participants' right to privacy, disclosure of findings/ results, confidentiality, codes of ethics and cultural sensitivity." Gratton and Jones (2010:121) point out that all researchers, regardless of the research approach adopted are subjected to ethical considerations. Other researchers put it in simple terms by reinforcing that ethical consideration is about being granted the consent to do the study; the methodology of the study; and taking

into consideration the interests of the public and respondents (Busher, 2002:81; Keeves, 1997:257-260).

The following ethical considerations were observed in this study:

I. Permission was granted to go ahead with the study by the Research Ethics Committee and high degree committee of the Cape Peninsula University of Technology after approval of the application.
II. Participants were not forced to take part in the research process, but written permission was granted by the organisations in which the study was conducted. The participation of the respondents in completing the questionnaires was not forced, rather only respondents that were willing to participate completed the questionnaires. Detailed explanation was provided to the respondents about the aim of the study, and help was readily available to clarify to the respondents if they encountered some difficulties in completing the questionnaire. In this regard, permission letters were obtained from 5 selected organisations.
III. Privacy and confidentiality were important issues that were upheld throughout this study process. This ensured that information obtained would not create any harm for the public, the university and participants' personal as well as their social life, but only used for the intended purposes. In this regard, participant's personal information as well as their responses were kept secret and could only be released on obtaining written approval from the participant.
IV. The whole study was conducted in accordance with the ethical requirements. In this regard, plagiarism rules were observed, data and findings were collected and reported in a comprehensive and honest way.

3.11 Summary

The aim of this chapter was to discuss the research design and methodology employed in this study to collect data required to meet the objectives of the study. It highlighted the research paradigm, research approach, research location, the population size, sample size and technique, data collection method used, data analysis methods, data reliability and validity, limitation of the study, and ethical consideration observed in the study. The study applied the quantitative research

method in the form of a structured self-administered questionnaire to collect data. Convenience sampling technique, a non-probability sampling was used accordingly for the selection of five (5) construction organisations in Cape Town, South Africa whilst probability sampling procedure in the form of stratified sampling technique was employed in the selection of the respondents to complete the questionnaire.

The chapter that follows will present, analyse and discuss the findings of this study from the data collected.

CHAPTER 4: ANALYSIS AND DISCUSSION OF RESULTS

4.1 Introduction

The main purpose of this chapter was to present, analyse and discuss the findings of this study. This was achieved by analysing and discussing the results of the questionnaire survey undertaken to determine the impact of HPWPs on project performance in selected construction companies in Cape Town, South Africa. The findings worked out in this chapter enabled the articulation of appropriate conclusions, suggest areas for further research, and provide recommendations pertaining to this study that were discussed under chapter 5 (Conclusion and Recommendations).

4.2 Restatement of research questions

As outlined in chapter 1, section 1.4; the study attempted to answer the following main research question: “What is the relationship between the four HPWPs and project performance?” In order to respond to this main question, the following sub-questions needed to be addressed:

I. How well have the organizations performed as a result of the application of HPWPs?
II. How do project team members and some line staff perceive the application of the four HPWPs in their organizations?

In the same vein, as stated in chapter 2, section 2.2; this study adopted the AMO theory as the theoretical framework. Therefore, the above research questions were tested using the AMO framework, utilizing the first two categories of the framework, namely Ability and Motivation. Specifically, the components of the first two categories of the framework that were considered are outlined below:

Ability HPWPs

I. Recruitment and Selection
II. Training and development

Motivation HPWPs

I. Performance Appraisal

II. Compensation systems

4.3 Survey response rate

As highlighted in chapter 3, section 3.3.2; the respondents for the current study were drawn from the five selected construction organisations in Cape Town, South Africa. The targeted respondents were employees who worked as project team members and line/ administrative staff. Each organisation was expected to provide between 10 to 15 employees to complete the questionnaires. In this regard, out of the 70 questionnaires handed over to the potential respondents, 63 usable completed questionnaires were received, achieving a response rate of 90%.

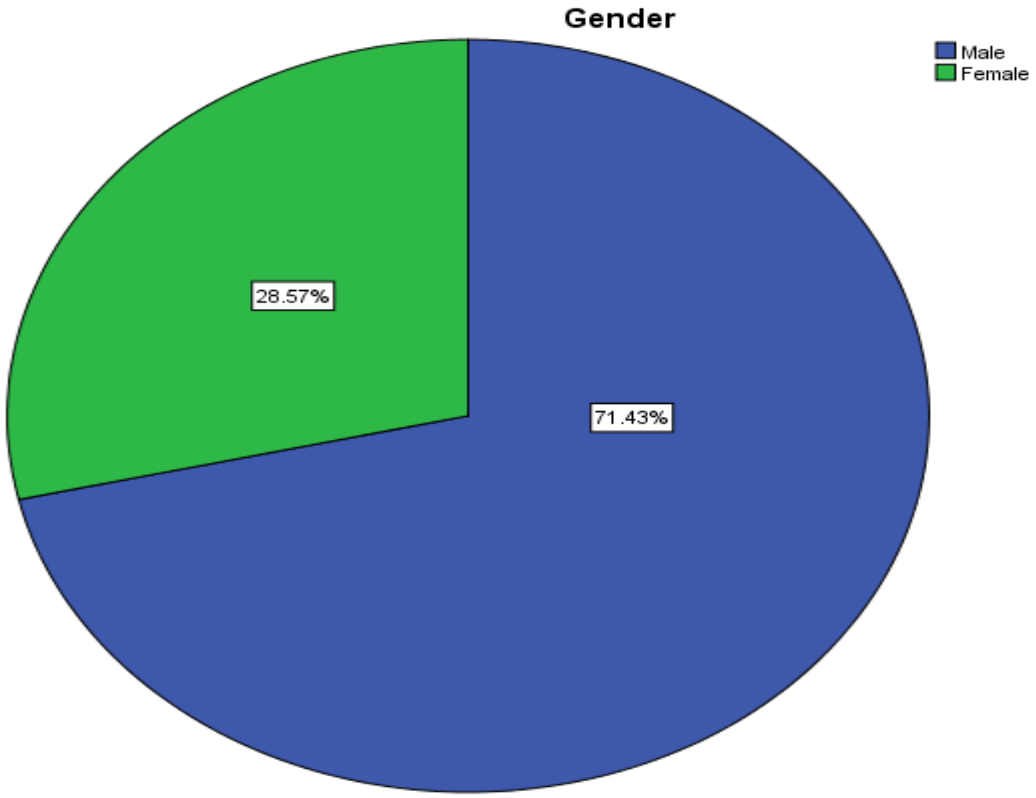
4.4 Respondents' personal profile

Section A of the questionnaire asked for respondents' personal details such as gender, educational level, position in the organization, work experience, age and the number of projects that the respondents were involved in. The purpose of this information was to reduce non-response bias by making sure and proving that the appropriate respondents with the required characteristics were selected to participate in the survey.

4.4.1 Respondent's gender profile

With regard to gender, as indicated in the Figure 4.1, 71.4% of the respondents were males whilst the other 28.6% were females. This result is indeed consistent with the bulk of the literature reviewed that the construction industry is highly dominated by male individuals (Kokkaew & Koompai, 2012: 6; Loosemore *et al*., 2003).

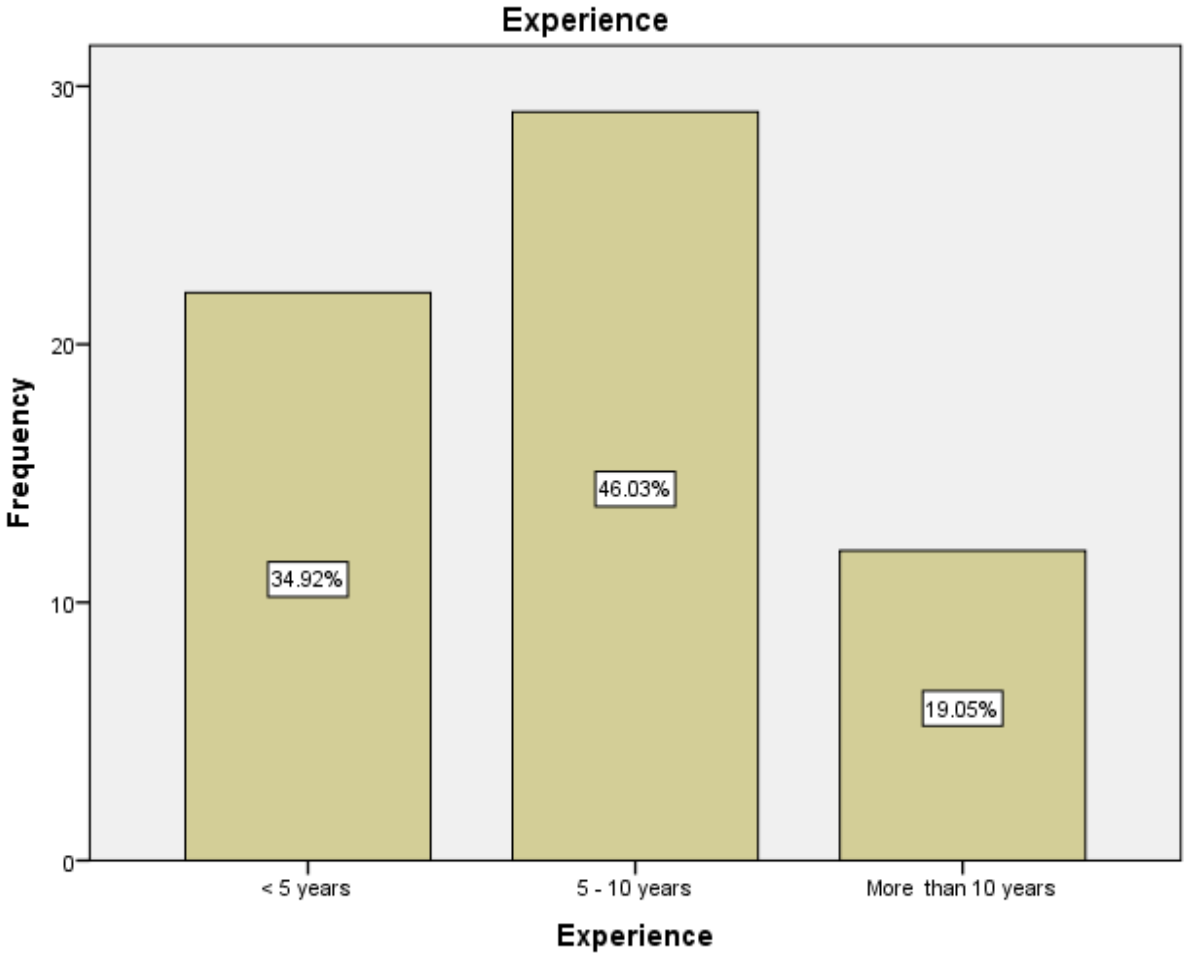
Figure 4.1: Respondents' gender



4.4.2 Respondents' level of work experience

The work experience of the respondents is shown on the bar graph in Figure 4.2. Of the respondents, 46, 03% had between 5-10 years of work experience in the construction industry, 39, 92% had less than 5 years whilst 19.05% had more than 10 years of work experience. The results suggested that most respondents had the required work experience in the construction industry since the bulk of the respondents, 65.08% had more than 5 years of work experience whilst only 34.92% had less than 5 years of work experience in the industry. Moore, Moore and Plugge (2006) found 4 to 6 months as a minimum construction work experience required prior to graduation for a person to be accepted to work in the industry.

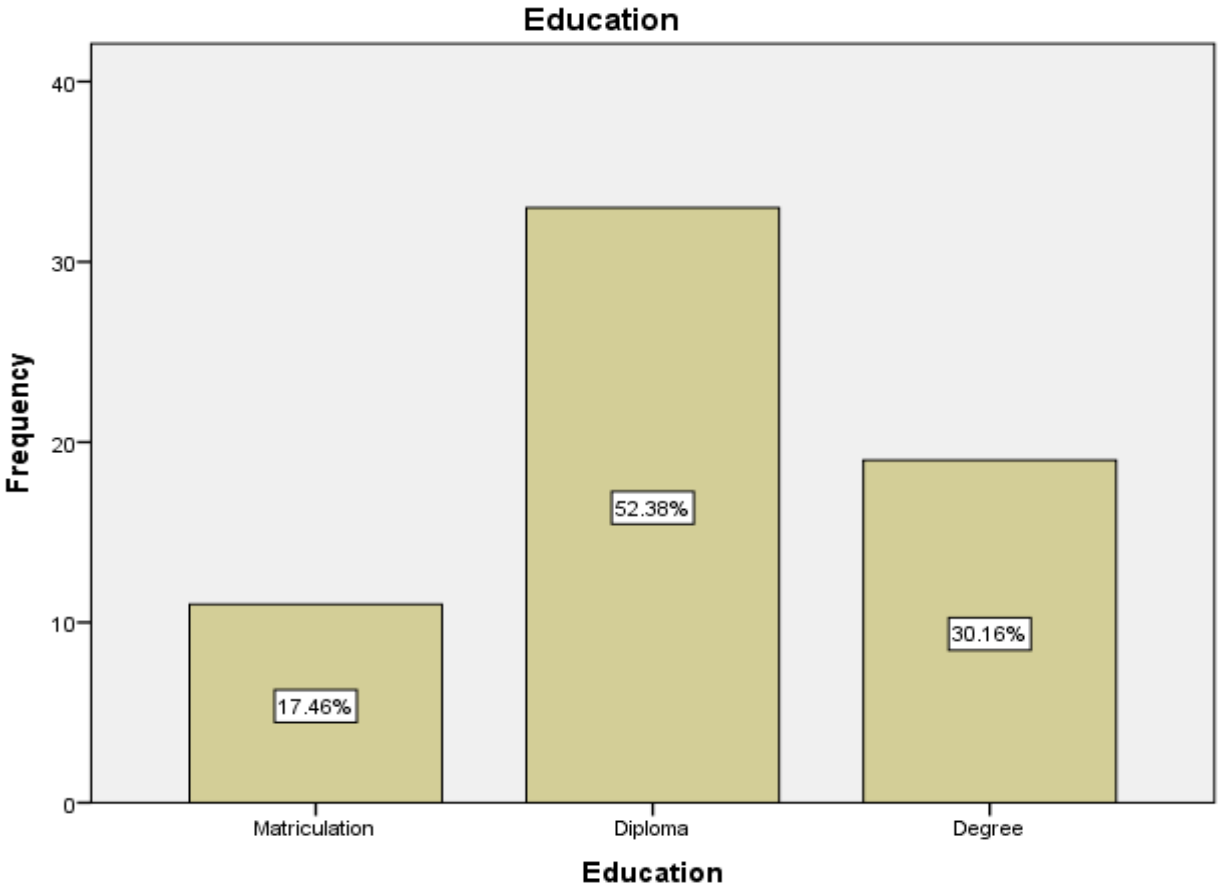
Figure 4.2: Level of work experience



4.4.3 Respondents' Educational profile

The educational profile of the respondents is shown in Figure 4.3. 52.38% of the respondents were qualified with a diploma qualification, 30.16% were in possession of a degree, whilst the other 17.46% were matriculates. Accordingly, most of the respondents, 82.54% were in possession of either a diploma or degree, which confirmed the nature of respondents targeted by the study. The study targeted people who worked as either project team members, namely project managers, engineers, architects, etcetera. or administrative staff / line managers who may consist of HR managers, sales and marketing managers, etcetera. These people were expected to be medium to highly educated individuals.

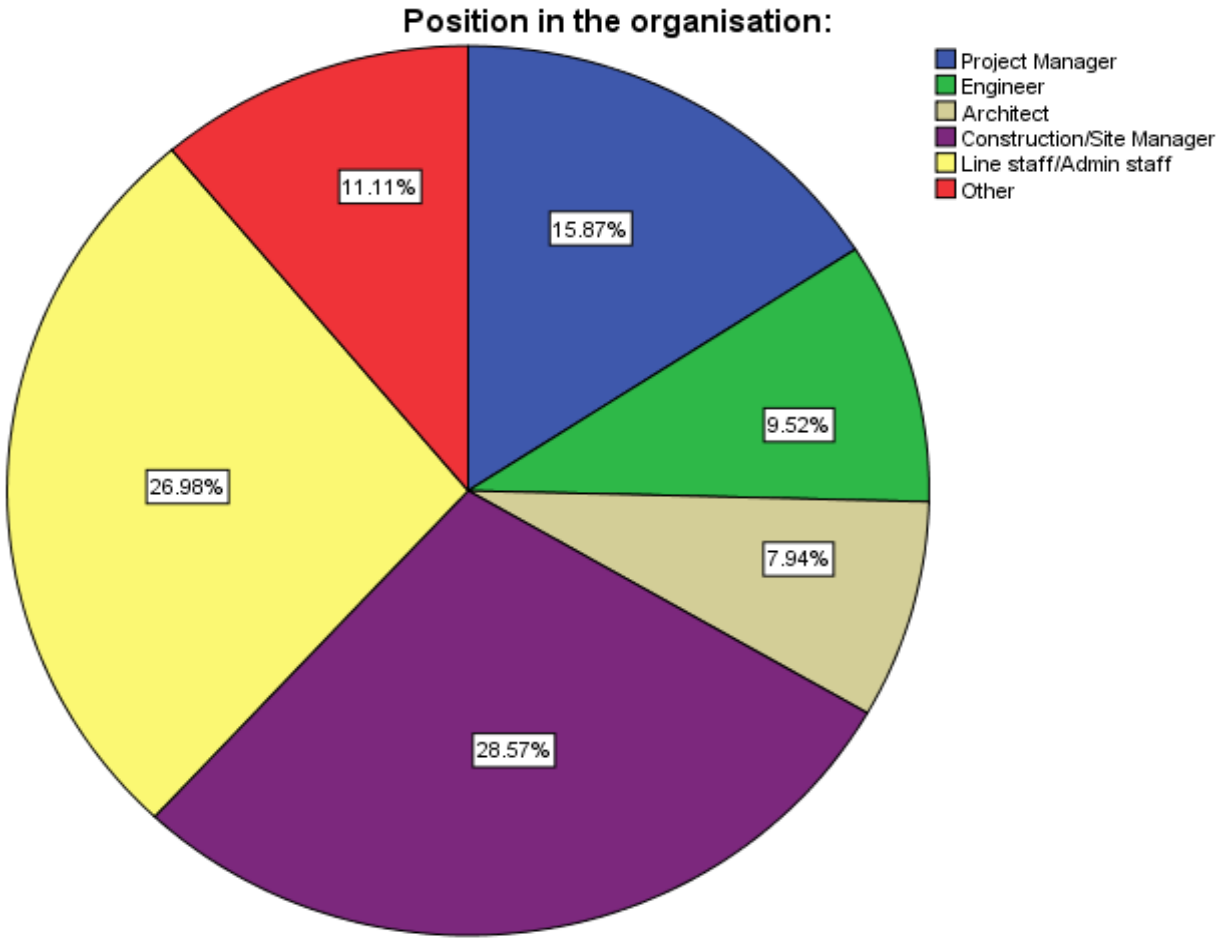
Figure 4.3: Educational profile of respondents



4.4.4 Respondents' job position

As shown Figure 4.4, with regard to the respondent's position in their organisations, 28.57% of the respondents indicated that they worked as construction/ site managers, 26,98% confirmed that they were in the category of line staff/ Admin staff, 15.87% were project managers, whilst 9.52% and 7.94% were engineers and architectures respectively. The other 11.11% indicated that they occupied other positions. Indeed, the results confirmed that the appropriate respondents responded to the questionnaire as the survey only targeted employees who were project team members or line/administrative staff. Those who occupied other positions, that is, the 11.11% indicated that they were commercial managers and quantity surveyors. These two other positions squarely fit into the category of project team members.

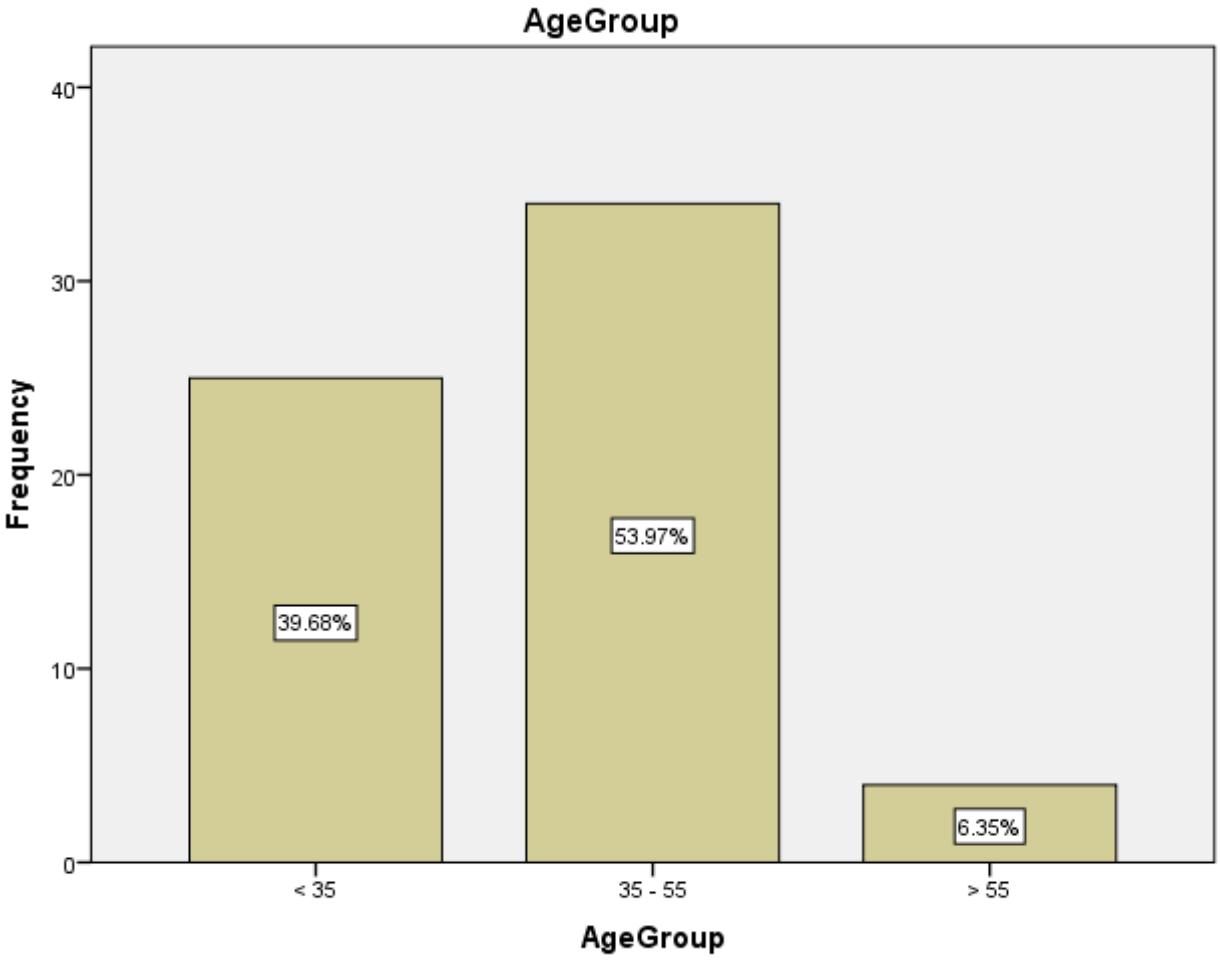
Figure 4.4: Job positions of respondents



4.4.5 Respondents' Age distribution

Age distribution is shown on the bar graph, Figure 4.5. Of the respondents 53.97% were between the ages of 35 and 55, 39.68% were less than 35 years of age, whilst only 6.35% were above 55 years old. This indicates that the bulk of the respondents were relatively young, but mature respondents. Accordingly, the construction industry is well known for employing young to middle aged individuals who are still energetic. However, the presence of older people between the ages of 35 and 55 as evidenced in the current study was also echoed by Kokkaew and Koompai (2012: 2), who posit that the construction industry is less attractive for young people because it is often labelled as risky and insecure.

Figure 4.5: The Age distribution of respondents

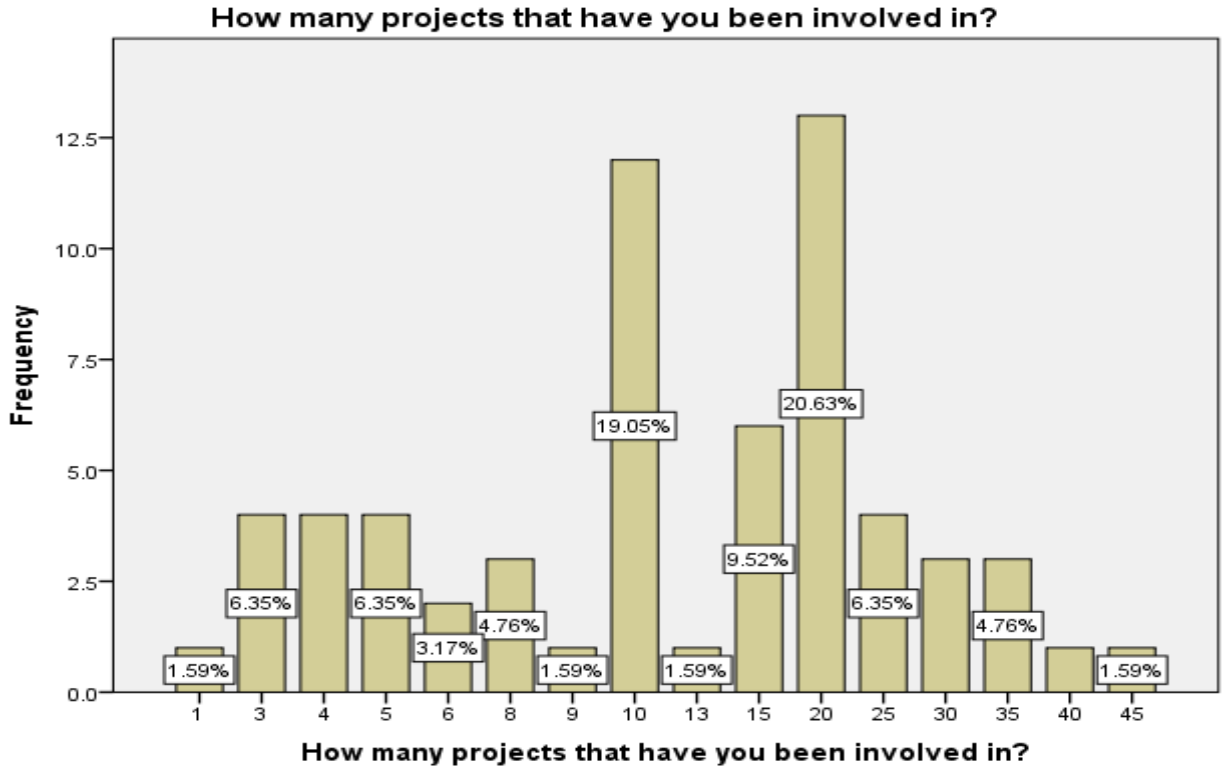


4.4.6 Number of projects

With regard to respondent's response rate on the number of projects that they were involved in, as shown in Figure 4.6, the majority: 20.63% of the respondents reported that they were involved in 20 projects, 19.05% indicated that they were involved in 10 projects. The others 9.15% reported to have been involved in 15 projects. 19.05% of the respondents were distributed equally to have been involved in 3, 5 or 25 projects, each having a percentage of 6.35% of the respondents. Similarly, respondents who participated in 1, 9, 13, 40 and 45 projects occupied 1.59% of the respondents in each category, whilst 4.76% of the respondents were reported to have been involved each in 8, 30 and 35 projects. Lastly, 3.17% of the respondents reported to have been involved in 6 projects. Overall, 76.2% reported to have been involved in 5 to 45 projects, whilst 23.8% reported to have been involved in less than

5 projects. And only 1.59% of the respondents reported to have been involved in less than 3 projects. The results indicate that the appropriate respondents answered the questionnaire as the majority of the respondents: 98, 41% reported to have been involved in at least 3 and above projects.

Figure 4.6: Number of projects



4.5 Descriptive and correlation analysis

The first and most important measure of central location is the arithmetic mean (average), often just referred to as the mean. The arithmetic mean of a dataset “is obtained by adding each value in the dataset and dividing the total by the number of variables in the dataset” (Willemse & Nyelisani, 2015:66). In SPSS, it is calculated automatically by performing the appropriate calculations. It is the most familiar and commonly used measure of central location among the median and the mode because it takes every score into account and works well with many statistical methods (Field, 2005). Standard deviation, on the other hand, measures on the average, how far each data value is from the mean (Leedy & Ormrod, 2013). In this regard, if the standard deviation is large, the variation in the data will be also large

whereas the “standard deviation of zero means there is no variation.” “Dispersion (or spread) refers to the extent to which the data values of a numeric random variable are scattered about their central location value.” The “range measures the difference between the highest and lowest values in a dataset” (Saunders et al., 2013). It is not a pure measure of spread since it only uses two values. “It is affected by outliers and gives no indication of the clustering of the data.” A large range indicates that the data is more widely spread.

Moreover, as highlighted in chapter 3, section 3.5; “correlations are regarded significant if $p \leq 0.01$. Relationships between variables are regarded as weak if r is ≤ ±0.1; modest if r is ≤ ±0.3; moderate if r is ≤ ±0.5; strong if r is ≤ ±0.8 and very strong if r is > ±0.8” (Willemse & Nyelisani, 2015:81).

The following sub-sections of 4.5; present and discuss findings in relations to the research questions of this study:

4.5.1 How well have the organizations performed as a result of the application of HPWPs?

With regard, to the above sub-research question, Project Performance (PP) had the highest mean of 4.2083 (see Table 4.1) as compared to all other variables (RS, TD, PA and CS). Also, since the highest possible mean of the data collected was 5, this means that project performance in the organisations, on average, was positive and high. This suggests that as far as project success is concerned, the organisations were at good positions. Moreover, PP had the smallest standard deviation and range of 0.39719 and 1.75 respectively as compared to other variables. This indicates that majority of the participants answered in a positive manner to the questions, and had almost similar views with regard to the extent of PP in their organisations. The results are in line with the research findings of Khan and Rasheed (2015:442), in which project success scored the highest mean of the HR variables measured. Of the 8 statements that measured PP, the statement: “Overall success of the project” attracted a response of agree and strongly agree from 96.8% of the respondents, while “meeting health and safety goals” and “opening new business opportunities for the company” achieved agree or strongly agree responses of 95.3% and 85.8%, respectively. On the other hand, the statement: “meeting project time goals” received the highest rating of disagree and strongly disagree, with a total of 4.8% of

respondents (see appendix D). These results suggest that the respondents perceived that their organization's project performance was very good, particularly in terms of achieving health and safety goals, and opening new businesses opportunities. However, in terms of meeting time goals, projects were less successful. The results are consistent with the view that most projects in the world are completed with time overrun (Acharya et al., 2004: 22.4.1). As far as health and safety is concerned, the respondents considered their project environment to hold relatively little risk of accidents and injuries, despitethe fact that construction work is famous for its danger and risk to life (a possibility of dying and getting injured three and two times, respectively, higher than a worker from any other industry (Shah Ali & Rahmat, 2010:30).

Table 4.1: Means, Standard deviations and Ranges for PP, RS, TD, PA and CS

Statistics						
		PP	RS	TD	PA	CS
N	Valid	63	63	63	63	63
	Missing	0	0	0	0	0
Mean		4.2083	3.9246	3.7857	3.4921	3.9087
Std. Deviation		.39719	.59167	.68877	.60199	.49656
Range		1.75	2.75	3.00	2.50	2.25

4.5.2 How do project team members and some line staff perceive the application of the four HPWPs in their organizations?

With regard to this research question, the four HPWPs referred to are: "Recruitment and Selection (RS), Training and Development (TD), Performance Appraisal (PA) and Compensation Systems (CS)." All these variables were measured as independent variables to PP. As shown on the Table 4.1, amongst the independent variables, RS and CS had the highest means of 3.9246 and 3.9087 respectively. This means that on average, the respondents perceive a positive and relatively good application of RS and CS in their organisations. PA recorded the smallest mean of 3.4921 whilst TD scored a mean of 3.7857. This means that, on average, the two variables although their means are above half, the respondents considered their

application in the organisations as relatively medium and below to the desired standard. Similarly, RS and CS scored smallest standard deviations and range values. With regard to the standard deviation, RS recorded 0.59167 whereas CS scored the smallest 0.49656. In terms of the range value, RS indicated the 2.75 whereas CS recorded 2.25. On the other hand, TD and PA had standard deviations of 0.68877 and 0.60199 respectively. The range values for TD and PA were 3.00 and 2.50 respectively. The smallest standard deviation and range values scored for RS and CS as compared to their counterparts: TD and PA, indicate that the respondents had relatively similar perceptions with regard to the applications of RS and CS in their organisations as compared to TD and PA, which revealed that respondents had relatively divergent perceptions with regard to their applications in the organisations.

These results were contrary to the findings of Marwat, Qureshi and Ramay (2007) and Tanveer, Shaukat, Alvi and Miner (2011:115). Their study reported high means in TD and PA as compared to CS. Similarly, small values for standard deviations and range were recorded in TD and PA. For standard deviation, both TD and PA are 0.81 whilst CS and RS record 1.18 and 0.85 respectively (Marwat, et al., 2007). With regard to the range, TD and PA score 3.67 and 3.57 respectively whilst RS and CS both score 4.0 (Marwat, et al., 2007). Their study focused on the impact of HR practices on employee performance. However, the current study results confirmed similar findings as to that of Khan and Rasheed (2015:442) only on the standard deviation of CS and mean of RS. Their findings had the highest mean recorded for RS whilst the lowest standard deviation recorded for CS (Khan & Rasheed, 2015:442).

With reference to RS variable alone, 87.3% of the respondents agreed and strongly agreed that the recruitment and selection policy is in line with employment legislations of the country. This was the only statement that recorded the highest number of respondents on agree and strongly agree out of the four statements. This was followed by the statement: “Selection system in our organization selects those having the desired knowledge, skills and attitudes,” which recorded 79.3% of the total respondents. The statement: “Project managers and HR managers participate in the selection process” is the statement, which had the highest score of 15.9% of

the respondents who strongly disagreed and disagreed with the statement (see appendix D). The above results are similar to the arguments posited by the SA Public Service Commission (2007) that developing recruitment and selection policies in line with the prevailing conventions and the country's employment legislations strengthen the recruitment and selection practices of any company. Also, Armstrong (2006) points out to the aim of recruitment and selection as to place on the job the best candidate who not only possesses the relevant qualifications, knowledge skills and experience about the job, but who also fits into the organization's corporate culture and resonates with the company's espoused values.

There seem to be unison between Keegan *et al*., (2011); Turner *et al*., (2008) arguments, and the current study's findings with regard to the statement: "Project managers and HR managers participate in the selection process.**"** This statement had the highest number of respondents, who disagreed and strongly disagreed with it. The researchers (Keegan *et al*., 2011; Turner *et al*., 2008), point out that the role of project managers and line managers in the management of HR activities is not clear. In this regard, it is suggested that HR specialists regulate, supervise and coordinate HR issues that affect line and project managers whilst both line managers and project managers oversee HR issues that pertain to project workers (Gray & Larson, 2008; Hällsten, 2000).

Among the TD 6 variable statements, a total of 82.5% of the respondents agreed and strongly agreed with the statement that: "Training needs identified are realistic, useful and based on the business strategy and project needs of the organization.**"** Based on agree and strongly agree this statement amassed the highest response followed by the statement: "New knowledge and skills are imparted to employees periodically to work in teams", which scored 76.2% of the respondents. Based on disagree and strongly disagreed, the highest was 17.5% of the respondents who disagreed with the statement: **"**The organization conducts extensive training programs for its employees in all aspects of quality**"** (see appendix D). Consistent with the last statement in which most respondents disagreed and strongly disagreed, Tabassi and Bakar (2009) who "studied human resource management in construction projects" also spotted training of employees as a major obstacles to effective use of HRM as a result of failure to employ an inclusive training approach

that include both on- the- job and off- the -job training. The results of the current study that supports that “training needs identified are realistic, useful and based on the business strategy and project needs of the organization” are consistent with the definition of what constitute training. “Training is defined as the formal and systematic modification of behaviour, attitudes and skills through learning experiences which can occur through education, instruction, development and planned experience” (Armstrong, 2001; Coetzee *et al*., 2013:202). It is systematic in the sense that skills to be taught and gained after training should be aligned to the skills needed to help achieve organisational goals as well as project needs of the organisation.

On PA’s 6 statements, the highest was 60.3% of the respondents who agreed and strongly agreed with the statement: “Appraisal system has a strong influence on individual and team behavior” followed by 58.7% of the respondents who agreed and strongly agreed with the statement: **“**Performance of employees is measured on the basis of objective quantifiable results.” Based on disagreed and strongly disagreed, the highest were the statements: “Employees are provided performance based feedback and counseling” and “The appraisal results are used for making decisions such as job rotation, training and compensation, promotion, etcetera,” which both scored 17.5% of the respondents (See appendix D). Like Beardwell and Thompson’s (2014:431) findings and Grobler *et al’s*., (2002:297-299) suggestions of an appropriate performance system, the results of the current study suggests that the respondents perceived that in their organizations the outcomes of the performance appraisal system influence both individual and team behavior, and that their “performance is measured objectively and quantifiably.” However, unlike Beardwell and Thompson (2014:431); Grobler *et al*., (2002:297-299) and Collins and Bell (2013), respondents perceive that there is “little or no performance based feedback and counseling provided to them”, and that there is no clear evidence to support the fact that the appraisal results were “used for making decisions such as job rotation, training, promotion and compensation.”

Lastly on CS’s four statements, the highest was 79.4% of the respondents who agreed and strongly agreed with the statement: **“**The compensation for all employees is directly linked to individual and team performance.” On the other side,

based on disagreed and strongly disagreed, the highest was 7.9% of the respondents who disagreed with the statement: **"**Job performance is an important factor in determining the incentive compensation of employees**."** (See appendix D). The results of the second statement are inclined to Liebing's (2001) argument that construction jobs do not provide competitive wages. More so, the results of the first statement are consistent with the assertion of Altarawmneh and Al-Kilani (2010) and Armstrong (2012:21) in Beardwell and Thompson (2014:463) that reward management should be aligned to the needs of the employees, and that rewards be distributed in a manner that matches the value and performance the employees have contributed to the organisation.

4.5.3 What is the relationship between the four HPWPs and project performance?

This was the main research question of the current study. In relation to this question, after conducting the normality test (See Table 4.2), the dependent Variable (PP) was correlated with the independent variables (RS, TD, PA and CS). As highlighted in chapter 3, section 3.5; correlation statistics were necessary for the current study because the main objective of the study was to establish the strength and direction of the relationship between the four HPWPs (RS, TD, PA and CS) and PP.

Table 4.2: Normality Test

Tests of Normality						
	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	p-value	Statistic	df	p-value
PP	.099	63	.200	.973	63	.189
RS	.162	63	.000	.954	63	.019
TD	.108	63	.065	.958	63	.030
PA	.204	63	.000	.927	63	.001
CS	.119	63	.027	.963	63	.052

The means of the PP statements and that of the four HPWPs statements were used to calculate the correlations. The findings were as indicated in Table 4.3. In Table 4.3, PP is shown to be only correlated with CS(r=0.292, p=0.020). On the other hand, PP is negatively correlated with RS(r=-0.168, p=0.188), TD (r=-0.041, p=0.752) and PA (r=-0.098, p=0.443). Thus, the “relationship between the independent variables” (RS, TD, PA and CS) and the depended variable (PP) is weak in all instances since r in all cases is ≤ ±0.3. As shown in Table 4.3, when the p-value is given as 0.000, it is always written as p-value < 0.001, since it is impossible to have a p-value of 0.000. It has to be noted, though, that RS is significantly correlated with TD, PA and CS (p-values <0.01). TD is not correlated with CS (p-value > 0.05).

Table 4.3: Correlation analysis of the variables

Correlations						
		PP	RS	TD	PA	CS
PP	Pearson Correlation	1	-.168	-.041	-.098	.292*
	p-value (2-tailed)		.188	.752	.443	.020
	N	63	63	63	63	63
RS	Pearson Correlation	-.168	1	.367**	.666**	.522**
	p-value (2-tailed)	.188		.003	.000	.000
	N	63	63	63	63	63
TD	Pearson Correlation	-.041	.367**	1	.618**	.225
	p-value (2-tailed)	.752	.003		.000	.076
	N	63	63	63	63	63
PA	Pearson Correlation	-.098	.666**	.618**	1	.492**
	p-value (2-tailed)	.443	.000	.000		.000
	N	63	63	63	63	63
CS	Pearson Correlation	.292*	.522**	.225	.492**	1
	p-value (2-tailed)	.020	.000	.076	.000	
	N	63	63	63	63	63

It is also important to note that on their own, RS, TD and PA have no significant relationship with PP; only CS has a significant correlation with PP. In simple terms, this suggests that PP is affected by RS by -16.8%; TD, by -4.1%; PA, by -9.8%. On the other hand, PP is affected by CS by 29.2%. This indicates that a relationship exists between the independent variables (RS, TD, and PA) and the dependent variable (PP), but the relationship is negative. This means that when the independent variables (RS, TD and PA) are increased, for example, the depended variable, PP, decreases by the same percentage shown above. However, the negative relationship that exists is not significant.

Conversely, a positive relationship exists between PP and CS, meaning that when CS is increased for example, PP increases also by 29.2%. This further confirms that when organizations effectively conduct their compensation practices well, they are bound to gain 29.2% increase in project performance.

These findings, particularly the influence of RS, TD and PA on PP are similar to the findings of Pinto and Prescott (1988) that support "the importance of "personal factor" rather than HR practices in the context of Project Success." The lack of influence by TD on PP, confirms that projects are temporary and unique in nature (PMI, 2008**)**. Projects are time bound and temporary in nature, and as a result, do not run together with activities such as training and development that are long-term. Also, arguments put forward on the need to save costs as a means of "gaining competitive advantage" also tend to undermine the effects of TD interventions on project success (Hobday, 2000; Porter, 2008). TD costs money, and since multi-project organizations are constrained by costs, time and quality, they consider not engaging in TD as a prudent decision in terms of budgeting (PMI, 2008). The negative relationships between RS and PA, and PP, in the current study are at variance with the findings of Sarwar et al. (2016:120), who reported that out of three HRM practices, RS and PA have a significant influence on project success while TD has an insignificant effect on project success in project-oriented organizations in Southern Punjab, Pakistan.

With regard to the influence of CS on PP, the findings of this study echo those of Khan and Rasheed (2015:442) and Belout and Gauvreau (2004). CS has a “positive and significant relationship with project success in Pakistani project-based organizations” (Khan & Rasheed, 2015:442).

Overall, the weak positive and negative relationship of the four HPWPs with project performance as perceived by the respondents was in consistent with the findings of Loosemore *et al*., (2003) who reveal that most of the construction industry’s employment practices are informal. It is also argued that “project teams need little attention, and project managers pay little attention to human resources,” with more “focus on structuring and planning operations” (Belout, 1998). Yet Dainty, Grugulis and Langford (2007) review of the current context of construction employment reflected skills shortages and informal employment practices as impediment to productivity in the industry.

4.5.4 Multiple Regression Analysis

Another aspect computed in this study was coefficient of determination. In this regard, the multiple regression analysis was applied by considering PP as criterion variable and (RS, TD, PA and CS) as three predictor variables. The outcome of model summary is depicted in Table 4.4 and 4.5. The coefficient of determination measures the extent to which the independent variable determines the dependent variable. In the current study, as shown in Table 4.4 and 4.5, $R^2 = 0.237$, which means that 23.7% of the variation of PP is directly due to the variation in all of the independent constructs. In simple terms, this means that 23.7% of PP is determined by the variables (RS, TD, PA and CS). The remaining 76.3% is determined by other factors, which cannot be discovered by the current study. This means that there are other factors, other than RS, TD, PA and CS which significantly influence PP.

Table 4.4: Coefficient of determination

Variables Entered/Removed[a]			
Model	Variables Entered	Variables Removed	Method
1	CS, TD, RS, PA[b]	.	Enter

Table 4.5: Coefficient of determination

Model Summary						
					Change Statistics	
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change
1	.487[a]	.237	.185	.35863	.237	4.512

4.5.5 Normality Test

Since most statistical tests are regulated by the “assumption of normality” (Thode, 2002), “assessing the normality assumption should be taken into account for using parametric statistical tests.” Thode (2002) asserts that deviations from normality render those statistical tests inaccurate (“non-normality”), hence the importance of determining the normality of data. “Tests that rely upon the assumption or normality are called parametric tests.” In case of data being not normal, it is highly recommended to use “statistical tests that do not rely upon the assumption of normality and these are called non-parametric tests” (Thode, 2002). Elliott and Woodward (1997) explain the difference between non-parametric and parametric tests when it comes to “the power to detect differences in the data,” maintaining that “non-parametric tests have less ability to detect real differences or variability in the data,” which explains the preference for parametric tests. As shown earlier in the

Table 4.2, to determine if the data set is normal, Shapiro-Wilk tests are performed (NIST/SEMATECH, 2006). In the current study the dependent variable in regression has to come from a normal distribution. Thus the Shapiro-Wilk test was used to determine whether the dependent construct (PP) comes from a normal distribution. Since the p-value > 0.05 for the normality test of PP, the current study can accept that the construct PP is normally distributed. And this is why regression and the Pearson correlation was used to determine the impact of the other constructs on PP.

4.6 Summary

The chapter has discussed, analysed and presented data that was obtained from questionnaires, conducted on project team members and staff members in selected multi-project construction companies in Cape Town, South Africa. The aim of the study was to determine the impact of four HPWPs (RS, TD, PA and CS) on project performance. The results indicated that only CS had a positive relationship with project performance whilst TD, PA and CS, all revealed negative relationship with project performance**.**

CHAPTER 5: CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The preceding chapter presented, analysed and discussed the findings of the current study. Therefore, this chapter concludes by providing inferential summaries of the key findings of the study. The chapter proceeds with highlights of the contribution of the current study, and an outline of the recommendations drawn from the findings and conclusions. The main aim of the study was to determine the perceptions of the project team members (project manager, engineer, architect, contractor, etcetera.) and some line staff (financial managers, HR managers, administrative staff, etcetera.) on the effects of HPWPs on project performance in their construction organizations, based on their knowledge and experience of working with projects. The study was motivated by the fact that detailed study of HRM in the project management field was still incomplete to give a final judgment on its significance in the project management, particularly as to which practices pose significant impact on project performance. Also, where studies concentrated on HRM in the project management field, most of it investigated the management of single projects instead of multi-project environments, and little focused on the individual HPWPs on project performance. In order to achieve the above aim, a structured questionnaire survey was used.

5.2 Overview of the research chapters

Chapter 1: The chapter presented the introduction, problem statement, research objectives, research questions and significance of the study.

Chapter 2: This chapter covered all the relevant literature to this study. The literature review covered relevant facts pertaining to HPWPs, project performance, and construction multi-project environments.

Chapter 3: This chapter provided information about the research design and methodology utilised to answer the research questions of this study. Specific aspects discussed include population of study and the sample and sampling method. It described the survey method that was used, as well as the manner in which the research was administered. The chapter went on to highlight the

components of the questionnaire that was used as well as the method of data analysis. The study adopted the positivist paradigm and a quantitative research strategy utilizing a survey as one of the quantitative research strategies. The SPSS version 24 was used to analyse data that was collected.

Chapter 4: This chapter was concerned with the analysis; discussion and interpretation of the questionnaire survey results which attempted to answer the research questions, and address the research objectives of this study. The results of the Pearson correlation and regression analysis computed revealed that only CS has a positive relationship with PP whilst RS, TD and PA have a negative relationship.

Chapter 5: This was the last chapter of the dissertation. In this chapter, the research questions were answered based on the obtained results. Also, it is the chapter in which limitations, contributions of the research and suggestions for future research, pertaining to this study were discussed. Conclusion and recommendations of this study were also highlighted in this chapter.

5.3 Restatement of the research objectives and questions of the current study

5.3.1 Research objectives:

V. **To investigate the relationship between the four HPWPs and project performance in the construction companies.**

This research objective sought to establish the relationship between the four HPWPs and project performance in the construction companies. The questionnaire survey method that was utilised to collect data from the five construction companies contained statements that measured both the four HPWPs and project performance. The responses of the participants on the questionnaire were recorded in the SPSS version 24. To determine the relationship between the four HPWPs and project performance, correlation analysis in SPSS was performed, utilizing a statistical process of Pearson correlation.

VI. To establish how well the organizations have performed as a result of the application of HPWPs.

This objective sought to understand how successful the selected construction companies were in project performance as a result of utilising the four HPWPs. To achieve this objective, the Pearson correlation results in SPSS were used in conjunction with the results of the coefficient of determination, also calculated in SPSS. The coefficient of determination measures the extent to which the independent variable determines the dependent variable.

VII. To ascertain how do project team members and some line staff perceive HPWPs in their organizations.

The purpose of this objective was to establish the perceptions of the project team members and some line staff to find out if the construction companies deploy HPWPs in an appropriate and desirable fashion as prescribed by the HRM theorists and the labour legislations of South Africa. To achieve this objective, participants' responses on the four HPWPs were computed to find the mean, standard deviation, range, frequencies and percentages in SPSS. This means that a High Performance Work Practice (HPWP) that had a high mean, small standard deviation and a small range indicates that the respondents were happy about how it was practiced in their organisations, and it also means that it was applied according to the labour legislations of South Africa, and as asserted by HRM theorists. However, the vice versa was true.

VIII. To provide recommendations with regard to the relationship between HPWPs and project performance.

The recommendations targeted to assist managers in the construction companies on the best ways to apply the HPWPs in order to achieve high project performance. To achieve this objective, appropriate recommendations were crafted based on the findings, analysis, discussion and conclusion reached out in this study.

5.4 Conclusion

This section provides the conclusion of the study by providing the summary of the findings and conclusions against the research questions. In each part, conclusions are highlighted in response to the problem statement that motivated the current study.

5.4.1 Summary of findings

The analysis of the data collected in this study has established that:

I. There is no “significant relationship between” the four HPWPs and project performance. This means that even though there is a relationship, the association is weak.

II. There exists a weak relationship between the four HPWPs and project performance. This means there is no strong association.

III. Out of the four HPWPs, only compensation system (CS) has a significant positive weak relationship on project performance.

IV. Out of the four HPWPs, Training and Development (TD), Performance Appraisal (PA) and Recruitment and Selection (RS) have insignificant negative weak relationship with project performance.

V. The coefficient of determination (r^2) revealed that only 23.7% of the variation of project performance is directly due to the variation in RS, TD, PA and CS while about 76.3% is due to other factors. This means that there is a majority of other factors that influence project performance as compared to just solely the four HPWPs measured in this study. Other than the four HPWPs, the other factors that might influence project performance are: “financing and payment of completed work, contract management, site conditions, availability of material, construction planning, policy of the government, and institutional capabilities” (Acharya *et al.*, 2004: 22.4.2; Mansfield, Ugwu & Doran, 1994; Ogulana& Promkuntong, 1996).

These inferential conclusions answer the research questions of this study in the ways discussed in section 5.4.2. Human resources management practices in the form of the four HPWPs have a relationship with project performance but the relationship is not significant. A change, for example, an improvement in the

compensation system (CS), should result in an increase in project performance, but the increment will not be significant

5.4.2 Research questions:

5.4.2.1 Main Research question: What is the relationship between the four HPWPs and project performance?

This research question sought to find answers as to whether the applications of RS, TD, PA and CS in the construction multi-project organisations have an influence on Project Performance, and the extent and direction of relationship. In this regard, the result could be positive, negative or no relationship, and the extent of the relationship could be significant or weak. If the relationship is positive, it means that if the four HPWPs are applied effectively in multi-project construction organisations they result in improvement in project performance. If the relationship is negative, it means that if the HPWPs are applied effectively, project performance does not necessarily improve. In either case, whether there is positive or negative relationship, the extent of the relationship can be weak or strong. Strong relationship means that the change in one of the HPWPs, for example effective use of CS, could result in a huge change in project performance, either positively or negatively whereas a weak relationship means that effective use of CS could result in a meagre change in project performance, either positively or negatively. Project performance was defined as the extent to which a project achieves project and business objectives as measured by factors such as “project efficiency, team satisfaction, impact on the customer, business success, preparing for the future and health and safety” (Chan 2010:5; Chan & Tam, 2000; Kerzner, 2009:6; Serrador & Turner, 2014:76; Shenhor, *et al*., 1997:8; Turner & Zolin, 2012:89). With regard to this research question, this study concluded that there is a relationship between the four HPWPs and project performance. TD, RS and PA have a negative and weak relationship with project performance while CS has a positive and weak relationship.

5.4.2.2 Sub question 1: How well have the organizations performed as a result of the application of HPWPs?

This sub research question sought to understand how successful the multi-project construction organisations were completing their projects as per the criteria of a successful executed project. This study concluded that the organisations are very

successful in completing their projects as per the criteria proposed in this study. The criteria in which most projects are very successful are: “meeting health and safety goals”, “opening new business opportunities for the company”, and “overall success of the project.” However, the projects of the organizations are not very successful in “meeting project time goals”, which is a critical factor that is used to measure project performance.

5.4.2.3 Sub question 2: How do project team members and some line staff perceive the application of the four HPWPs in their organizations?

The above sub- question sought to establish the perception of project team members and some line staff as to what extent the applications of practices and policies related to RS, TD, PA and CS meet the Human Resources and Labour legislations minimum desirable standards. This study concluded that only CS and RS policies and practices are proved to be being moderately applied in accordance with the minimum HR and labour legislations expected standards. However, although TD and PA policies and practices are being aligned with the some HR and Labour legislations standards, the alignment is somehow arbitrary and not up to admired standard.

5.5 Research contribution

5.5.1 Theoretical contributions

The results of this study make contributions to an understanding of the impact of HPWPs on project performance in multi-project environments. This study has provided a unique insight of the relationship between HPWPs that are considered to be universally applicable in most organizations (RS, TD, PA and CS). By conducting the study in the insufficiently studied multi-project environments of developing countries, like South Africa, this study has contributed to the body of literature that pertains to Human Resources Management Practices and Project management. The bulk of the literature reviewed indicated a less significant relationship between HRM and project management, and the findings of this study advocated to this by revealing that only CS has a positive relationship with project performance, while the rest of HPWPs (TD, RS and PA), have a negative relationship.

5.5.2 Practical contributions

The results of this study had indicated lack of proper deployment of the HPWPs; on the one hand, whilst on the other, project performance was relatively high, among the multi-project organizations studied. This is contrary to the current literature that was reviewed which reveals a less significant relationship between HRM and project management despite the former being properly deployed. This means that the weak relationship between the four HPWPs and project performance that was established in this study is not solely attributed to the general facts found on the previous studies. But, other factors such as improper deployment of the HPWPs also contribute to the findings. Consequently, this will assist the management of multi-project environments, especially in the construction industry to invest their stake, resources and money more on the four HPWPs and make better policies for employees' RS, TD and PS to double the current rate of project performance.

5.5.3 Methodological contributions

Furthermore, this study employed a quantitative approach in the form of self-administered structured questionnaire, making it an explanatory study, which is most appropriate for correlational research. This study sought to find the relationship between the four HPWPs and project performance in selected construction organizations in Cape Town, South Africa. In this case, statistical tests such as correlation were used to determine the relationship between variables. This approach eradicates bias in the interpretation of results, by placing great premium on objectivity and reliability of findings and it encourages replication. Also, this methodology had never been utilized to study the relationship between HPWPs and performance and as such it provides a reliable means of studying future relationships where project performance is a dependent variable.

5.6 Limitations and suggestions for future research

Whilst strengths surpass limitations, and that all the effort to dwindle bias and subjectivity, and accentuate reliability was made, limitations in the current study can be uncovered as no study is error free. This study investigated the impact of HPWPs on project performance in selected multi-project construction organisations in Cape Town, South Africa. Thus, the results of this study cannot be generalised to all

organisations in South Africa and other developing countries as limited sample was used, and there are differences in climate, working conditions, and culture in different regions and countries. Moreover, multi-project organizations are not limited to the construction industry only, but can exist in other industries, namely manufacturing industries. Therefore, future research can be extended to other industries and developing countries where multi-project execution exist other than the construction industry and South Africa respectively. Also, whilst HPWPs (RS, PA, TD and RS) are regarded as the best HR practices (Delaney & Huselid in McKenna & Beech, 20014:39–40), there is a belief that organisations differ according to the match between structures, cultures and design of HPWPs, for example, the HPWPs in a fast food franchise are likely to be different to a highly innovative software development organisation. This may necessitate future research to focus on other HPWPs in relation with the third category of the AMO framework, namely the Opportunity category. Examples of HPWPs which fall under the Opportunity category include employee security, sharing information, teamwork and decentralised decision making (McKenna & Beech, 2014:40–42). However, the current study has ensured that the results are reliable. To ensure this, key issues appropriate to the situation in the construction industries were addressed, and construction industries have been widely recognised as multi-project organisations where the management of HRM practices are critical (Hashim *et al*., 2012:21; Engwall & Sjo¨gren, 2003; Elonen & Artto, 2003; Kaulio, 2008:338; Meredith & Mantel, 2012).

5.7 Recommendations

The results of the current study have necessitated the suggestions of various specific recommendations. The following recommendations are useful, and should assist both management and team members in the multi-project environments in the effective deployment of HPWPs to achieve successful project performance:

I. Institutionalisation of effective training strategies

The statistically insignificant negative relationship between TD and project performance might have been caused by poor current training and development practices being practiced by the construction multi-project organisations that participated in this study which could not enhance the skills of the project team members to enable them perform well on projects. Hence, top management should

seek the most effective training and development practices to ensure successful project performance. This could be achieved by making follow ups on the market to consider training programs for employees on changing nature of machines, equipment, technology and materials used in the construction industry.

II. Staffing needs for the project team

Recruitment and selection to staff project assignment is critically important for project success. This requires ensuring that the right people are available at the right time in the right place, that is, team members required for any project must be qualified and suitable for the project. To achieve this, management and project managers should know the type and volume of business for the period in order to determine the required number of employees, and their skills.

III. Create proper reward systems

It has emerged in the findings of this study that CS has a statistically significant positive relationship with project performance, implying that well-crafted and implemented compensation policy and practices will ensure that project team members put extra effort in the execution of projects, thus ensuring project success. In this regard, the organisations should have systems for properly rewarding both individual and team performance and salaries should be adjusted according to the cost of living.

IV. Investment of more effort and money on PA

A comprehensive system that is clear for team members and managers, to evaluate performance periodically must be established. It should measure both individual and team performance, and be aligned to the reward systems. PA should not be considered as support function or supplementary, but seen as a driving force in achieving intended project outcome.

V. Institute measures to reduce project time overruns

Time overruns in completing a project is costly to the company. This could be healed by ensuring the availability of project resources in time and in the right quantity and

quality. This could be achieved by proper planning, which takes into account changes in the environment and goals, for example, developing a time schedule for project materials and human resources to prevent shortages. Proper project planning is perceived to have a significant impact in enabling the project to be delivered on time, within budget and, according to client satisfaction (Badewi, 2016:769).The human resources should be motivated project team members of qualified and quantified engineers, technicians, and foremen staff with appropriate experience of the project who can follow the different technical and managerial aspects of the project.

5.8 Summary

This chapter is the last chapter of the current study. In a nutshell, it has concluded this study by highlighting conclusions and recommendations. The conclusions were based on the findings which have been presented, analysed and discussed in chapter four. The conclusions were discussed in response to research questions formulated to address the problem statement that motivated the current study. The recommendations were based on the findings and conclusions. The chapter also mentioned the contribution of the current study, limitations of this research, and suggested areas that future research could focus on.

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APPENDIX A: QUESTIONNAIRE

THE QUESTIONNAIRE

THE RESEARCH TOPIC:

The impact of High Performance Work Practices (HPWPs) on project performance in selected construction companies in Cape Town, South Africa

I am a master's research scholar at the **Cape Peninsula University of Technology**, and I assure you that this survey will only be used for academic research purposes. This study examines the extent to which the Human Resource Practices as practiced in your organization have contributed to successful project performance.The information collected will be kept confidential. Your participation in this survey is completely voluntary.

You need to complete **all** the **3** sections [**A, B, C**] below. However, if you encounter any difficulties in completing the questionnaire or you need more explanation on some items, I am readily available to assist. I am reachable on the following contact details: **email**: mchapano@gmail.com or call Cell: **0842373010**.

Section A: **Demographic Details**

The information provided in this section is to assist in the interpretation of the results of this study. The confidentiality of the information provided here is guaranteed.**Insert an X in the appropriate boxes.**

1. Gender:

MALE	
FEMALE	

2. How long have you worked in the construction organisations?

>5 years		5>10 years		10+years	

3. What is your level of education?

Matriculation	Diploma	Degree	Masters	Doctorate

4. Position in the organisation:

   What is your current job position? (**Insert an X**)

   - Project Manager……..
   - Engineer……
   - Architect…….
   - Construction/ Site manager…….
   - Line staff/ Admin staff :(eg.HR manager or Financial manager, etc)……
   - Others, please specify……..

5. How old are you? (**Insert an X): >35**.....**35-55**.....**<55**.....
6. How many projects that have you been involved in?----------

Section B: PROJECT PERFORMANCE

In this section, think about how Project Performance in the last 3 projects has been improved in relation to the given statements. For each item, select the number in the scale below, which best represents to what extent you agree or disagree with the statements.

STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE
1	2	3	4	5

Insert X on the number in the column that best shows your level of agreement	**Strongly Disagree** ⟷ **Strongly Agree**				
Project Performance in the last 3 projects has been improved in relation to:	**1**	**2**	**3**	**4**	**5**
1. Meeting project time goals					
2. Meeting project budget goals					
3. Meeting scope and requirements goals					
4. Team's satisfaction with the project					
5. Client's satisfaction with the project results					
7. Overall success of the project					
8. Health and safety goals as set by the owner					
9. Opening new business opportunities for the company					

Section C: HIGH PERFORMANCE WORK PRACRICES (HPWPs)

In the series of the statements below, and based on your experience, you are required to indicate to what extend do you agree or disagree with statements. Please indicate your response by selecting the number that best describes how you feel and know about the statement.

STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE
1	2	3	4	5

Insert X on the number in the column that best shows your level of agreement	**Strongly Disagree ⟷ Strongly Agree**				
RECRUITMENT & SELECTION (RS)	**1**	**2**	**3**	**4**	**5**
1. Project managers and HR managers participate in the selection process					
2. Valid and standardized tests are used when required in the selection process					
3. Selection system in our organization selects those having the desired knowledge, skills and attitudes					
4. The recruitment and selection policy is in line with employment legislations of the country					

STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE
1	2	3	4	5

Insert X on the number in the column that best shows your level of agreement		**Strongly Disagree** ⟷ **Strongly Agree**				
TRAINING & DEVELOPMENT (ETD)		**1**	**2**	**3**	**4**	**5**
5.	The organization conducts extensive training programs for itsemployees in all aspects of quality					
6.	Employees in each job will normally go through trainingprograms					
7.	Training needs are identified through a formalperformance appraisal/ a systematic process mechanism					
8.	The organization offers formal training programs that are NQF aligned in teaching employees the skills they need to perform their jobs					
9.	New knowledge and skills are imparted to employees periodically to work in teams					
10.	Training needs identified are realistic, useful and based on the business strategy and project needs of the organization					

STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE
1	2	3	4	5

Insert X on the number in the column that best shows your level of agreement	**Strongly Disagree** ◄——► **Strongly Agree**				
PERFORMANCE APPRAISAL (PA)	**1**	**2**	**3**	**4**	**5**
11. Performance of employees is measured on the basis of objective quantifiable results					
12. Employees are provided performance based feedback and counseling					
13. Employees have faith in the performance appraisal system					
14. Appraisal system has a strong influence on individual and team behaviour					
15. The objectives of the appraisal system are clear to all employees					
16. The appraisal results are used for making decisions such as job rotation, training and compensation, promotion, etc.					

STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE
1	2	3	4	5

Insert X on the number in the column that best shows your level of agreement	**Strongly Disagree** ← → **Strongly Agree**				
COMPENSATION SYSTEM (CS)	1	2	3	4	5
17. Job performance is an important factor in determining the incentive compensation of employees					
18. In our organization compensation is in the form of salary, benefits and other non-financial rewards and, is comparable to the market					
19. In our organization, compensation is decided on the basis of competence or ability of the employee					
20. The compensation for all employees is directly linked to individual and team performance					

END OF THE QUESTIONNAIRE

THANK YOU FOR YOUR PARTICIPATION!

APPENDIX B: ETHICAL CLEARANCE CERTIFICATE

Cape Peninsula University of Technology

P.O. Box 1906 • Bellville 7535 South Africa •Tel: +27 21 6801680 • Email: saliefa@cput.ac.za
Symphony Road Bellville 7535

Office of the Chairperson Research Ethics Committee	Faculty: **BUSINESS**

At a meeting of the Research Ethics Committee on 18 May 2016, **Ethics Approval**

was granted to MUNODANI, Chapano (211155403) **for research activities**

Related to the MTech/DTech: MTech: BUSINESS ADMINISTRATION

at the Cape Peninsula University of Technology

Title of dissertation/thesis:	A correlation study of the impact of High Performance Work Practices (HPWPs) on project performance: A study of selected construction companies in the Cape Town Metropolitan Area of South Africa Supervisor: Dr M Twum-Darko

Comments:

Decision: APPROVED

Signed: Chairperson: Research Ethics Committee	18 May 2016 Date

Clearance Certificate No | 2016FBREC353

APPENDIX C: CONSENT LETTERS

5th Floor, 73 Hertzog Boulevard
Cape Town 8001
P O Box 50
Eppindust 7475
Cape Town
South Africa
Tel: +27 (21) 431 3400
Fax: +27 (21) 431 3410
E-mail: construction.wc@murrob.com
Web: www.construction.murrob.com

28th April 2016

CPUT

Student M Chapano – Student # 211155403

This letter serves to confirm that our company will assist Mr Chapano with the research required for his project. This will be completed in June 2016.

Yours faithfully
For and on behalf of
Murray & Roberts Western Cape

A Farrar
HR Manager

TARGET
PROJECTS

5th May 2016

TO WHOM IT MAY CONCERN

This letter serves to confirm that Target Projects will be assisting Mr. M. Chapano with his project "A correlation study of the impact of High Performance Work Practises on Project Performance".

For any queries or information please do not hesitate to contact us.

Kind Regards,

Andrew Hoeks – Operations Director
Target Projects
Project Management

TARGET
PROJECTS
PO Box 6853, Roggebaai, 8012
Tel: 021 461-0077
Fax: 021461-0097

BERRISFORD CONSTRUCTION

11th August 2016

CPUT

Student M Chapano – Student # 211155403

This letter serves to confirm that our company will assist Mr Chapano with the research required for his project. This will be completed in August 2016.

Yours faithfully
For and on behalf of
Berrisford Construction cc

JHC Berrisford
Director/Owner

TEL: (021)448-1659 FAX: (021)447-9053 CELL: 082-8513905 JEREMYB@ICON.CO.ZA
8 MOUNTAIN ROAD WOODSTOCK CAPE TOWN 7925
BERRISFORD CONSTRUCTION CC MEMBER: JEREMY BERRISFORD (BSc CM(UCT) BBusSci(UCT))
REGISTRATION NO. CK98 20318/23 VAT NO. 4660174253

GOSSOW & HARDING CONSTRUCTION

12 August 2016

CPUT

Student M Chapano – Student # 211155403

This letter serves to confirm that our company assisted Mr Chapano with the research required for his project.

Yours faithfully,
Gossow & Harding Construction (Pty) Ltd

Office Manager

Po Box 288 Maitland 7404. 7 Norway Road Maitland. Tel: 021 511 3101. Fax: 021 511 3108. www.ghconstruction.co.za
Directors: Uwe Gossow & Mark Harding
Reg No.: 2004/2002/487/07

BOBBY PROP CONSTRUCTION

(021) 5101992 Office
(021) 5111242 Fax

ATLANTIC HOUSE
PERTH RD
MAITLAND,
7405

1 June 2016

CPUT

Student M Chapano – Student # 211155403

This letter serves to confirm that our company will assist Mr Chapano with the research required for his project. This will be completed in June 2016.06.01

Yours faithfully
For and on behalf of
Bobby Prop Construction

Melvyn Gottschalk
Maintenance Manager

Cell: (082) 396 0370
Tel: (021) 511 9802
Fax: (021) 511 1242

APPENDIX D: SPSS DATA ANALYSIS

RELIABILITY TESTS CRONBACH'S ALPHA

Reliability Statistics

Cronbach's Alpha	N of Items
.848	28

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Meeting project time goals	104.65	97.328	.155	.850
Meeting project budget goals	104.60	98.405	.122	.850
Meeting scope and requirements goals	104.51	100.835	-.077	.854
Team's satisfaction with the project	104.63	101.397	-.114	.857
Client's satisfaction with the project Results	104.35	100.457	-.044	.853
Overall success of the project	104.22	99.369	.054	.851
Health and safety goals as set by the owner	104.29	96.304	.321	.845
Opening new business opportunities for the company	104.41	93.569	.404	.843

Project managers and HR managers participate in the selection process	105.16	98.426	.046	.856
Valid and standardized tests are used when required in the selection process	104.97	88.193	.660	.833
Selection system in our organization selects those having the desired knowledge, skills and attitudes	104.52	91.737	.567	.838
The recruitment and selection policy is in line with employment legislations of the country	104.32	93.607	.399	.843
The organization conducts extensive training programs for its employees in all aspects of quality	105.06	86.996	.629	.834
Employees in each job will normally go through training programs	104.94	89.544	.545	.837
Training needs are identified through a formal performance appraisal / a systematic process mechanism	104.94	93.093	.376	.844
The organization offers formal training programs that are NQF aligned in teaching employees the skills they need to perform their jobs	104.97	90.676	.496	.839
New knowledge and skills are imparted to employees periodically to work in teams	104.73	89.910	.564	.837

Training needs identified are realistic, useful and based on the business strategy and project needs of the organization	104.65	94.102	.386	.843
Performance of employees is measured on the basis of objective quantifiable results	105.02	97.532	.202	.848
Employees are provided performance based feedback and counseling	105.27	88.394	.649	.834
Employees have faith in the performance appraisal system	105.24	92.152	.539	.839
Appraisal system has a strong influence on individual and team behaviour	105.05	91.530	.537	.839
The objectives of the appraisal system are clear to all employees	105.29	88.078	.628	.834
The appraisal results are used for making decisions such as job rotation, training and compensation, promotion, etc.	105.19	87.705	.577	.836
Job performance is an important factor in determining the incentive compensation of employees	104.78	91.724	.420	.842
In our organization compensation is in the form of salary, benefits and other non-financial rewards and, is comparable to the market	104.78	92.240	.478	.840

In our organization, compensation is decided on the basis of competence or ability of the employee	104.76	98.797	.065	.852
The compensation for all employees is directly linked to individual and team performance	104.71	93.691	.484	.841

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
108.67	100.290	10.015	28

Cronbach's Alpha for Independent variables: (RS, TD, PA &CS)

Reliability Statistics

Cronbach's Alpha	N of Items
.883	20

Item Statistics

	Mean	Std. Deviation	N
Project managers and HR managers participate in the selection process	3.51	.982	63
Valid and standardized tests are used when required in the selection process	3.70	.909	63

Selection system in our organization selects those having the desired knowledge, skills and attitudes	4.14	.737	63
The recruitment and selection policy is in line with employment legislations of the country	4.35	.786	63
The organization conducts extensive training programs for its employees in all aspects of quality	3.60	1.040	63
Employees in each job will normally go through training programs	3.73	.954	63
Training needs are identified through a formal performance appraisal / a systematic process mechanism	3.73	.884	63
The organization offers formal training programs that are NQF aligned in teaching employees the skills they need to perform their jobs	3.70	.927	63
New knowledge and skills are imparted to employees periodically to work in teams	3.94	.896	63
Training needs identified are realistic, useful and based on the business strategy and project needs of the organization	4.02	.751	63
Performance of employees is measured on the basis of objective quantifiable results	3.65	.600	63

Employees are provided performance based feedback and counseling	3.40	.908	63
Employees have faith in the performance appraisal system	3.43	.734	63
Appraisal system has a strong influence on individual and team behaviour	3.62	.792	63
The objectives of the appraisal system are clear to all employees	3.38	.958	63
The appraisal results are used for making decisions such as job rotation, training and compensation, promotion, etc.	3.48	1.060	63
Job performance is an important factor in determining the incentive compensation of employees	3.89	.952	63
In our organization compensation is in the form of salary, benefits and other non-financial rewards and, is comparable to the market	3.89	.805	63
In our organization, compensation is decided on the basis of competence or ability of the employee	3.90	.734	63
The compensation for all employees is directly linked to individual and team performance	3.95	.658	63

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Project managers and HR managers participate in the selection process	71.49	89.189	.119	.891
Valid and standardized tests are used when required in the selection process	71.30	79.053	.771	.868
Selection system in our organization selects those having the desired knowledge, skills and attitudes	70.86	83.673	.603	.875
The recruitment and selection policy is in line with employment legislations of the country	70.65	85.779	.409	.880
The organization conducts extensive training programs for its employees in all aspects of quality	71.40	79.405	.640	.872
Employees in each job will normally go through training programs	71.27	81.684	.566	.875
Training needs are identified through a formal performance appraisal / a systematic process mechanism	71.27	84.071	.463	.879
The organization offers formal training programs that are NQF aligned in teaching employees the skills they need to perform their jobs	71.30	82.924	.508	.877

New knowledge and skills are imparted to employees periodically to work in teams	71.06	81.383	.629	.873
Training needs identified are realistic, useful and based on the business strategy and project needs of the organization	70.98	86.177	.402	.880
Performance of employees is measured on the basis of objective quantifiable results	71.35	89.102	.255	.884
Employees are provided performance based feedback and counseling	71.60	79.759	.726	.870
Employees have faith in the performance appraisal system	71.57	84.862	.514	.877
Appraisal system has a strong influence on individual and team behaviour	71.38	84.562	.492	.878
The objectives of the appraisal system are clear to all employees	71.62	79.014	.730	.869
The appraisal results are used for making decisions such as job rotation, training and compensation, promotion, etc.	71.52	78.221	.694	.870
Job performance is an important factor in determining the incentive compensation of employees	71.11	84.326	.407	.881

In our organization compensation is in the form of salary, benefits and other non-financial rewards and, is comparable to the market	71.11	85.584	.411	.880
In our organization, compensation is decided on the basis of competence or ability of the employee	71.10	92.281	-.033	.892
The compensation for all employees is directly linked to individual and team performance	71.05	86.207	.468	.879

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
75.00	92.355	9.610	20

Cronbach's Alpha for Dependent variable: Project Performance (PP)

Reliability Statistics

Cronbach's Alpha	N of Items
.761	8

Item Statistics

	Mean	Std. Deviation	N
Meeting project time goals	4.02	.772	63
Meeting project budget goals	4.06	.619	63

Meeting scope and requirements goals	4.16	.545	63
Team’s satisfaction with the project	4.03	.695	63
Client’s satisfaction with the project Results	4.32	.591	63
Overall success of the project	4.44	.562	63
Health and safety goals as set by the owner	4.38	.580	63
Opening new business opportunities for the company	4.25	.782	63

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Meeting project time goals	29.65	7.102	.583	.711
Meeting project budget goals	29.60	7.985	.494	.730
Meeting scope and requirements goals	29.51	8.222	.505	.730
Team’s satisfaction with the project	29.63	7.945	.426	.742
Client’s satisfaction with the project Results	29.35	9.199	.153	.783
Overall success of the project	29.22	8.369	.435	.741
Health and safety goals as set by the owner	29.29	8.175	.478	.733

Opening new business opportunities for the company	29.41	6.956	.613	.704

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
33.67	10.097	3.178	8

Frequency Table

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	45	71.4	71.4	71.4
	Female	18	28.6	28.6	100.0
	Total	63	100.0	100.0	

Experience

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	< 5 years	22	34.9	34.9	34.9
	5 - 10 years	29	46.0	46.0	81.0
	More than 10 years	12	19.0	19.0	100.0
	Total	63	100.0	100.0	

Education

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Matriculation	11	17.5	17.5	17.5
	Diploma	33	52.4	52.4	69.8
	Degree	19	30.2	30.2	100.0
	Total	63	100.0	100.0	

Position in the organisation:

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Project Manager	10	15.9	15.9	15.9
	Engineer	6	9.5	9.5	25.4
	Architect	5	7.9	7.9	33.3
	Construction/Site Manager	18	28.6	28.6	61.9
	Line staff/Admin staff	17	27.0	27.0	88.9
	Other	7	11.1	11.1	100.0
	Total	63	100.0	100.0	

Position Other

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	63	100.0	100.0	100.0

Age Group

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	< 35	25	39.7	39.7	39.7

	35 - 55	34	54.0	54.0	93.7
	> 55	4	6.3	6.3	100.0
	Total	63	100.0	100.0	

How many projects that have you been involved in?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	1	1.6	1.6	1.6
	3	4	6.3	6.3	7.9
	4	4	6.3	6.3	14.3
	5	4	6.3	6.3	20.6
	6	2	3.2	3.2	23.8
	8	3	4.8	4.8	28.6
	9	1	1.6	1.6	30.2
	10	12	19.0	19.0	49.2
	13	1	1.6	1.6	50.8
	15	6	9.5	9.5	60.3
	20	13	20.6	20.6	81.0
	25	4	6.3	6.3	87.3
	30	3	4.8	4.8	92.1
	35	3	4.8	4.8	96.8
	40	1	1.6	1.6	98.4
	45	1	1.6	1.6	100.0
	Total	63	100.0	100.0	

Meeting project time goals

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	1	1.6	1.6	1.6
	Disagree	2	3.2	3.2	4.8
	Neutral	6	9.5	9.5	14.3
	Agree	40	63.5	63.5	77.8
	Strongly Agree	14	22.2	22.2	100.0
	Total	63	100.0	100.0	

Meeting project budget goals

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neutral	10	15.9	15.9	15.9
	Agree	39	61.9	61.9	77.8
	Strongly Agree	14	22.2	22.2	100.0
	Total	63	100.0	100.0	

Meeting scope and requirements goals

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neutral	5	7.9	7.9	7.9
	Agree	43	68.3	68.3	76.2
	Strongly Agree	15	23.8	23.8	100.0
	Total	63	100.0	100.0	

Team’s satisfaction with the project

	Frequency	Percent	Valid Percent	Cumulative Percent

Valid	Neutral	14	22.2	22.2	22.2
	Agree	33	52.4	52.4	74.6
	Strongly Agree	16	25.4	25.4	100.0
	Total	63	100.0	100.0	

Client's satisfaction with the project Results

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neutral	4	6.3	6.3	6.3
	Agree	35	55.6	55.6	61.9
	Strongly Agree	24	38.1	38.1	100.0
	Total	63	100.0	100.0	

Overall success of the project

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neutral	2	3.2	3.2	3.2
	Agree	31	49.2	49.2	52.4
	Strongly Agree	30	47.6	47.6	100.0
	Total	63	100.0	100.0	

Health and safety goals as set by the owner

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neutral	3	4.8	4.8	4.8
	Agree	33	52.4	52.4	57.1
	Strongly Agree	27	42.9	42.9	100.0
	Total	63	100.0	100.0	

Opening new business opportunities for the company

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	2	3.2	3.2	3.2
	Neutral	7	11.1	11.1	14.3
	Agree	27	42.9	42.9	57.1
	Strongly Agree	27	42.9	42.9	100.0
	Total	63	100.0	100.0	

Project managers and HR managers participate in the selection process

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	2	3.2	3.2	3.2
	Disagree	8	12.7	12.7	15.9
	Neutral	17	27.0	27.0	42.9
	Agree	28	44.4	44.4	87.3
	Strongly Agree	8	12.7	12.7	100.0
	Total	63	100.0	100.0	

Valid and standardized tests are used when required in the selection process

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	1	1.6	1.6	1.6
	Disagree	4	6.3	6.3	7.9

	Neutral	20	31.7	31.7	39.7
	Agree	26	41.3	41.3	81.0
	Strongly Agree	12	19.0	19.0	100.0
	Total	63	100.0	100.0	

Selection system in our organization selects those having the desired knowledge, skills and attitudes

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neutral	13	20.6	20.6	20.6
	Agree	28	44.4	44.4	65.1
	Strongly Agree	22	34.9	34.9	100.0
	Total	63	100.0	100.0	

The recruitment and selection policy is in line with employment legislations of the country

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	2	3.2	3.2	3.2
	Neutral	6	9.5	9.5	12.7
	Agree	23	36.5	36.5	49.2
	Strongly Agree	32	50.8	50.8	100.0
	Total	63	100.0	100.0	

The organization conducts extensive training programs for its employees in all aspects of quality

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	11	17.5	17.5	17.5
	Neutral	18	28.6	28.6	46.0
	Agree	19	30.2	30.2	76.2
	Strongly Agree	15	23.8	23.8	100.0
	Total	63	100.0	100.0	

Employees in each job will normally go through training programs

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	9	14.3	14.3	14.3
	Neutral	12	19.0	19.0	33.3
	Agree	29	46.0	46.0	79.4
	Strongly Agree	13	20.6	20.6	100.0
	Total	63	100.0	100.0	

Training needs are identified through a formal performance appraisal / a systematic process mechanism

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	8	12.7	12.7	12.7
	Neutral	11	17.5	17.5	30.2
	Agree	34	54.0	54.0	84.1
	Strongly Agree	10	15.9	15.9	100.0
	Total	63	100.0	100.0	

The organization offers formal training programs that are NQF aligned in teaching employees the skills they need to perform their jobs

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	7	11.1	11.1	11.1
	Neutral	18	28.6	28.6	39.7
	Agree	25	39.7	39.7	79.4
	Strongly Agree	13	20.6	20.6	100.0
	Total	63	100.0	100.0	

New knowledge and skills are imparted to employees periodically to work in teams

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	6	9.5	9.5	9.5
	Neutral	9	14.3	14.3	23.8
	Agree	31	49.2	49.2	73.0
	Strongly Agree	17	27.0	27.0	100.0
	Total	63	100.0	100.0	

Training needs identified are realistic, useful and based on the business strategy and project needs of the organization

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	3	4.8	4.8	4.8
	Neutral	8	12.7	12.7	17.5
	Agree	37	58.7	58.7	76.2
	Strongly Agree	15	23.8	23.8	100.0
	Total	63	100.0	100.0	

Performance of employees is measured on the basis of objective quantifiable results

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neutral	26	41.3	41.3	41.3
	Agree	33	52.4	52.4	93.7
	Strongly Agree	4	6.3	6.3	100.0
	Total	63	100.0	100.0	

Employees are provided performance based feedback and counselling

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	11	17.5	17.5	17.5
	Neutral	23	36.5	36.5	54.0
	Agree	22	34.9	34.9	88.9
	Strongly Agree	7	11.1	11.1	100.0
	Total	63	100.0	100.0	

Employees have faith in the performance appraisal system

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	1	1.6	1.6	1.6
	Disagree	3	4.8	4.8	6.3
	Neutral	30	47.6	47.6	54.0
	Agree	26	41.3	41.3	95.2
	Strongly Agree	3	4.8	4.8	100.0
	Total	63	100.0	100.0	

Appraisal system has a strong influence on individual and team behaviour

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	1	1.6	1.6	1.6
	Disagree	3	4.8	4.8	6.3
	Neutral	21	33.3	33.3	39.7
	Agree	32	50.8	50.8	90.5
	Strongly Agree	6	9.5	9.5	100.0
	Total	63	100.0	100.0	

The objectives of the appraisal system are clear to all employees

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	3	4.8	4.8	4.8
	Disagree	6	9.5	9.5	14.3
	Neutral	24	38.1	38.1	52.4
	Agree	24	38.1	38.1	90.5
	Strongly Agree	6	9.5	9.5	100.0
	Total	63	100.0	100.0	

The appraisal results are used for making decisions such as job rotation, training and compensation, promotion, etc.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	3	4.8	4.8	4.8
	Disagree	8	12.7	12.7	17.5
	Neutral	18	28.6	28.6	46.0
	Agree	24	38.1	38.1	84.1

	Strongly Agree	10	15.9	15.9	100.0
	Total	63	100.0	100.0	

Job performance is an important factor in determining the incentive compensation of employees

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	5	7.9	7.9	7.9
	Neutral	17	27.0	27.0	34.9
	Agree	21	33.3	33.3	68.3
	Strongly Agree	20	31.7	31.7	100.0
	Total	63	100.0	100.0	

In our organization compensation is in the form of salary, benefits and other non-financial rewards and, is comparable to the market

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	3	4.8	4.8	4.8
	Neutral	15	23.8	23.8	28.6
	Agree	31	49.2	49.2	77.8
	Strongly Agree	14	22.2	22.2	100.0
	Total	63	100.0	100.0	

In our organization, compensation is decided on the basis of competence or ability of the employee

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	2	3.2	3.2	3.2
	Neutral	14	22.2	22.2	25.4
	Agree	35	55.6	55.6	81.0
	Strongly Agree	12	19.0	19.0	100.0

	Total	63	100.0	100.0	

The compensation for all employees is directly linked to individual and team performance

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	1	1.6	1.6	1.6
	Neutral	12	19.0	19.0	20.6
	Agree	39	61.9	61.9	82.5
	Strongly Agree	11	17.5	17.5	100.0
	Total	63	100.0	100.0	

Descriptives

			Statistic	Std. Error
PP	Mean		4.2083	.05004
	95% Confidence Interval for Mean	Lower Bound	4.1083	
		Upper Bound	4.3084	
	5% Trimmed Mean		4.2078	
	Median		4.2500	
	Variance		.158	
	Std. Deviation		.39719	
	Minimum		3.25	
	Maximum		5.00	
	Range		1.75	
	Interquartile Range		.38	
	Skewness		.156	.302
	Kurtosis		-.126	.595

RS	Mean		3.9246	.07454
	95% Confidence Interval for Mean	Lower Bound	3.7756	
		Upper Bound	4.0736	
	5% Trimmed Mean		3.9433	
	Median		4.0000	
	Variance		.350	
	Std. Deviation		.59167	
	Minimum		2.25	
	Maximum		5.00	
	Range		2.75	
	Interquartile Range		.50	
	Skewness		-.547	.302
	Kurtosis		.409	.595
TD	Mean		3.7857	.08678
	95% Confidence Interval for Mean	Lower Bound	3.6123	
		Upper Bound	3.9592	
	5% Trimmed Mean		3.8170	
	Median		3.8333	
	Variance		.474	
	Std. Deviation		.68877	
	Minimum		2.00	
	Maximum		5.00	
	Range		3.00	
	Interquartile Range		.83	
	Skewness		-.547	.302
	Kurtosis		.339	.595

PA	Mean		3.4921	.07584
	95% Confidence Interval for Mean	Lower Bound	3.3405	
		Upper Bound	3.6437	
	5% Trimmed Mean		3.5038	
	Median		3.6667	
	Variance		.362	
	Std. Deviation		.60199	
	Minimum		2.17	
	Maximum		4.67	
	Range		2.50	
	Interquartile Range		.67	
	Skewness		-.618	.302
	Kurtosis		-.253	.595
CS	Mean		3.9087	.06256
	95% Confidence Interval for Mean	Lower Bound	3.7837	
		Upper Bound	4.0338	
	5% Trimmed Mean		3.9169	
	Median		4.0000	
	Variance		.247	
	Std. Deviation		.49656	
	Minimum		2.75	
	Maximum		5.00	
	Range		2.25	
	Interquartile Range		.75	
	Skewness		-.111	.302
	Kurtosis		-.269	.595

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	p-value	Statistic	df	p-value
PP	.099	63	.200	.973	63	.189
RS	.162	63	.000	.954	63	.019
TD	.108	63	.065	.958	63	.030
PA	.204	63	.000	.927	63	.001
CS	.119	63	.027	.963	63	.052

a. Lilliefors Significance Correction

REGRESSION ANALYSIS

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	CS, TD, RS, PA[b]	.	Enter

a. Dependent Variable: PP

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics	
					R Square Change	F Change
1	.487[a]	.237	.185	.35863	.237	4.512

Model Summary

Model	Change Statistics		
	df1	df2	p-value F Change
1	4	58	0.003

a. Predictors: (Constant), CS, TD, RS, PA

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	p-value
1	Regression	2.321	4	.580	4.512	.003[b]
	Residual	7.460	58	.129		
	Total	9.781	62			

a. Dependent Variable: PP

b. Predictors: (Constant), CS, TD, RS, PA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	p-value
		B	Std. Error	Beta		
1	(Constant)	3.684	.414		8.902	.000
	RS	-.249	.108	-.371	-2.298	.025
	TD	.044	.085	.077	.523	.603
	PA	-.113	.124	-.171	-.908	.368
	CS	.442	.111	.552	3.982	.000

a. Dependent Variable: PP

Correlations

		PP	RS	TD	PA	CS
PP	Pearson Correlation	1	-.168	-.041	-.098	.292*
	p-value (2-tailed)		.188	.752	.443	.020
	N	63	63	63	63	63
RS	Pearson Correlation	-.168	1	.367**	.666**	.522**
	p-value (2-tailed)	.188		.003	.000	.000
	N	63	63	63	63	63
TD	Pearson Correlation	-.041	.367**	1	.618**	.225
	p-value (2-tailed)	.752	.003		.000	.076
	N	63	63	63	63	63
PA	Pearson Correlation	-.098	.666**	.618**	1	.492**
	p-value (2-tailed)	.443	.000	.000		.000
	N	63	63	63	63	63
CS	Pearson Correlation	.292*	.522**	.225	.492**	1
	p-value (2-tailed)	.020	.000	.076	.000	
	N	63	63	63	63	63

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).