IMPACT OF PROJECT MANAGEMENT PRACTICES ON ORGANISATIONAL PERFORMANCE OF SMALL AND MEDIUM SIZE ENTERPRISES: A CASE OF LETAN LIMITED

BY

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A RESEARCH PROJECT REPORT SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF A DEGREE OF MASTERS OF ARTS IN PROJECT PLANNING AND MANAGEMENT OF THE UNIVERSITY OF NAIROBI.

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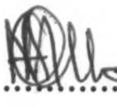
DECLARATION

This research project report is my original work and has not been presented for the award of any degree of the university.

Signature.....  **Date**...16/11/2012.....

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This research project report has been submitted for examination with my approval as the university supervisor.

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DEDICATION

This work is dedicated to my loving husband Vincent and daughters Shelby and Pacey, for their encouragement, unequivocal support and consideration made throughout my academic studies which made reaching this goal truly attainable.

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LIST OF ACRONYMS AND ABBREVIATIONS

CDF	Constituency Development Funds
CEO	Chief Executive Officer
CPM	Critical Path Method
KPIs	Key Performance Indicators
NEPAD	New Partnerships for Africa's Development
NPV	Net Present Value
OGC	Office of Government Commerce
OPM3	Organisational Project Management Maturity Model
PERT	Program Evaluation and Review Technique
PM	Project Management
PMBoK	Project Management Body of Knowledge
PMI	Project Management Institute
PRINCE 2	Project in Controlled Environment
RICS	Royal Institution of Chartered Surveyors
SME	Small and Medium Size Enterprises

ABSTRACT

The focus of this study was on the impact of project management practices on organisational performance in small and medium size enterprises (SMEs). Letan Limited was selected as an SME that has adopted project management practices, for this study. The measurement of organisational performance was measured using project performance; three criteria for measuring project performance were identified for their widespread application in project management definition and general understanding amongst practitioners. These included: time, cost and quality criteria. Questionnaires were used to collect data within the selected organisation (Letan Limited) to assess the level of importance of linking various project management practices in order to realise greater organisational performance. The questionnaires were also used in establishing which project management practices significantly influence organisational performance and measured time, cost and quality performances of projects of the organization leading to greater organisational performance. Analysis of the impact of project management practices on organisational performance was done using descriptive and inferential data analysis using SPSS 19 and Microsoft Excel 2007 software to determine the relationship between the significant project management practices and organisational performance. The key findings from the research were that it was important to link the various project management practices to realise successful completion of projects leading to better organisational performance. It was also discovered that all project management practices were found to be significant to realise better organisational performance however project cost management followed by project scope management were the most significant. Time performance lagged behind where as the cost and quality performance trends were generally as expected and very important in realising improved organisational performance. The study showed that engaging in project management practices had a positive impact on organisational performance as benefits accrued improved organisational performance. The study finally provided recommendations for improvement in project management practices and more organisation performance metrics recently developed in other research works like benefit to end users, benefit to national infrastructure should be included for performance measurement. Recommendations were also made on areas for further studies on adoption of project management practices in all sectors in addition to the small and medium size enterprises (SMEs).

CHAPTER ONE
INTRODUCTION

1.1 Background to the study

As businesses search for new and better means of achieving competitive advantage, the capacity of every functional area to improve organisational performance is under scrutiny. Today's small and medium size organisations manage projects within increasingly complex environments. New product development, outsourcing and policy implementation, in addition to traditional, but vital, system development and implementation, are amongst the current key project initiatives organisations must manage. In this regard, execution of projects in business enterprises are undertaken through various project management practices carried out by various project managers daily. Specific project objectives are set to be achieved at the end of the business project. The ability to successfully execute these projects is what drives the realisation of intended benefits and the achievement of organisational performance. Organisations that execute projects successfully employ effective project management practices as a tool to achieve business objectives. Given the strategic impact that projects have on a business, organisations must follow effective project management practices that measure progress and risks and ensure the right projects can be delivered in alignment with organisational priorities in order to realise improved organisational performance.

Time, cost and quality objectives are basic and common to almost all projects and are discussed in the success subject matter of most projects (Belassi and Tukel, 1996; Walker, 1995). Project management practices are tried and tested processes collected from experiences and lessons learned and have been repeated and improved to produce consistent outcomes and they are documented as examples, baselines and measures (Karim, 2012).

Letan Limited was incorporated in 1994 as a construction and infrastructure engineering company offering services in construction of building projects, roads, and water and sewerage projects and related civil engineering infrastructure projects. Over time, it has undertaken and commissioned projects of varied nature from industrial developments to public utilities and from commercial buildings and residential developments to large civil engineering projects.

Letan handles projects across varied regions in Kenya and its client portfolio includes government and government agencies, public sector and private sector/corporate organisations. Letan Limited has adopted project management practices in execution of projects, to impact positively towards the successful execution of projects that they undertake in order to retain their customers and grow their business.

1.2 Statement of the Problem

The focus of this study highlighted the key project management practices suited for SMEs environment that impact positively on their organisational performance. Small and medium size enterprises (SMEs) need a light version of project management practices given their limited resources in order to increase organisational performance in terms of increased market share and profits from successful projects. The field project management practices have matured over many years but most interest has been concentrated on projects and project management practices in large companies. Management of projects in large organisations size has very different characteristics to project management practices of projects in SMEs (Turner, et al, 2010). SMEs require less bureaucratic methods of management, with a greater flexibility.

1.3 Purpose of the Study

The purpose of this research was to establish the impact of project management practices on the organisational performance measured in terms of time, cost and quality performances of projects, of small and medium size enterprises (SMEs).

1.4 Objectives

The objectives of this research were:

1. To assess the level of importance of linking various project management practices in order to realise greater organisational performance.
2. To establish which project management practices significantly influence organisational performance.
3. To determine the effects of time, cost and quality performances of projects on organisational performance.
4. To analyze the impact of project management practices on organisational performance.

1.5 Research Questions

In order to realize these objectives, the following research questions arose:

1. To what extent is it important to link the various project management practices in order to realise greater organisational performance?
2. What project management practices used by Letan Limited significantly impact on its organisational performance?
3. How effective are time, cost and quality performance on organisational performance at Letan Limited?
4. What is the impact of project management practices on organisational performance?

1.6 Significance of the Study

Research in the field of project management is of high relevance to policy makers in both the public and the private sector. The application of project management practices approaches in both private and public sector is gradually becoming an important issue in developing economies, where projects of different size and structures are undertaken. The study seeks to reveal that application of project management practices is an essential management approach for policy makers in both public and private sector to realise greater performance.

Government entities: This study is intended to promote better project management practices that can be adopted by government entities for efficient use of government resources and subsequently better service to the public at large.

Academicians and students who are interested in pursuing more knowledge in this field will benefit as it has theoretical relevance in the field of project management.

1.7 Delimitation of Study

Numerous factors affect project performance and subsequent organisation performance. The focus here was on the impact emanating from engaging in certain project management practices but, the scope of this study was small to medium sized enterprises. Letan Limited, an SME, was used as a case study from which results can be generalized to SMEs. Organisational performance was considered in the context of achievement of a project's time, quality and cost

objectives; it excluded other emerging performance metrics used in the measurement of project performance. In Letan our scope was limited to their construction section and particularly execution of building projects.

1.8 Limitations of the Study

Financial resources required to conduct this study were limited as well as shortage of the time to conduct the study. Time constraint and expense/ cost related to collection of data, getting appointments, traveling to the potential respondents were the main hurdles in this study.

1.9 Assumptions of Study

The researcher assumes that the respondents provided information that was accurate and reliable in conducting research. The study assumed that project management practices are key for success of projects, and secondly the adoption of these practices makes a difference to organisational performance in SMEs. This study addressed these assumptions directly by focusing on finding out of which project management practices most affected organisational performance in SMEs, this was done answering the research questions.

1.10 Definitions of Significant Terms

Cost Performance	The degree to which a project's cost objective is achieved measured as the unit cost.
Organisational Performance	Measures for project success including savings benefits of projects, projects resulting in sales growth, and overall business performance compared to a previous period.
Project communication management	The knowledge area that employs the processes required to ensure timely and appropriate generation, collection, distribution, storage, retrieval and ultimate disposition of project information.

Project	Temporary organization that is needed to produce a unique and predefined outcome or result at a pre-specified time using predetermined resources.
Project cost management	A series of activities for estimating, allocating, and controlling costs within the project.
Project management	Application of knowledge, skills, tools and techniques to project activities to meet project requirements.
Project management practices	Management and administrative activities and decisions from the "cradle" to the "grave" of a project
Project performance	The totality of time, cost and quality performance of a given project.
Project risk management	Structured approach for the identification, assessment, and prioritization of undesirable events; followed by planning of resources to minimize, monitor, and control the probability and impact of these events.
Project scope management	The sum of processes needed to ensure a project containing all the work required, and only the work required, to complete the project successfully and is concerned with defining and controlling what is and what is not included in the project.
Quality performance	The degree to which a project's quality objective is attained which is subjectively measured on a ranking scale.
Small and medium size enterprises	Simple organisational structures, the prime role

	played by the owner-manager as a driving force, an essentially local market, implicit strategy and a little planning and control.
Time performance	The degree to which a project's time objective is achieved, measured on the basis of a before-and after effect

1.11 Organisation of the Study

The first chapter was an introduction, reasons for the study, research objectives, research questions, significance of the study, and an overview of the research proposal. The second chapter reviewed relevant studies, local and international, which were done and identified what the objectives of these studies, were, the results and gaps were identified; these studies informed the current study. The third chapter dealt with research design and methodology. It covered research design, population, sample, data collection, and data analysis. Further, this chapter gave insights as to how the research study data was collected and analyzed and the appropriateness of the research methods in addressing the objectives of the study. Chapter four examined the results of the research conducted, focusing on the problem of this research. Tables and percentiles were used to present the findings, descriptive and inferential statistics were used to illustrate and interpret the findings. Chapter five highlighted the key findings of this research and included recommendations and suggestions on areas for future research.

CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

Theory reviewed in this chapter was to proffer a better understanding of project management practices by defining and describing concepts of project management practices as well as analyzing its impact on organisational performance. For this purpose, theories associated with impact of project management practices on organizational performance of small and medium size enterprises have been reviewed. The project management practices background is mainly derived from the Project Management Body of Knowledge (PMBOK), written by PMI (2004, 2008).

2.2 The concept of project management

According to PMI, a project is a temporary endeavor undertaken to create a unique product, service or result. From the definition, a project is called temporary; temporary means that there is a definite beginning and a definite end to a project. The project is ended when the objectives have been achieved or that the project is terminated because the objectives can no longer be met. A project is a temporary endeavor with a defined beginning and end, usually time-constrained, and often constrained by funding or deliverables (Pritchard, 2006), undertaken to meet unique goals and objectives (Sebastian, 2007), typically to bring about beneficial change or added value. The temporary nature of projects stands in contrast with business as usual or operations (Dinsmore, 2005), which are repetitive, permanent, or semi-permanent functional activities to produce products or services. In practice, the management of these two systems is often quite different, and as such requires the development of distinct technical skills and management strategies.

Where PMI defines projects as an endeavor, Sadeh et al (2001) describe it a little more specific as being temporary organizations within organizations. This nature of projects is also acknowledged by PMI as they recognize that a project team seldom outlives the project. PRINCE 2, which stands for PRojects IN Controlled Environments and is a widely used and acknowledged project management method, gives a definition on projects that seems to combine the two definitions mentioned above; it is a temporary organization that is needed to

produce a unique and predefined outcome or result at a pre-specified time using predetermined resources Office of Government Commerce (OGC) (2002).

According to Messeghem (2003) SMEs refer to simple organisational structures, the prime role played by the owner-manager as a driving force, an essentially local market, implicit strategy and a little planning and control. Their resources are limited and their strategic options are comparatively simplistic and narrow (Robinson Jr. & Pearce II 1984, 128). The importance of projects to organizations cannot be underestimated, these not only hold for the largest of corporations, but perhaps even more for SMEs. SMEs play an important economic role in many countries through projects (Bowen, Morara and Mureithi, 2009). In Kenya, for example SME sector contributed over 50 percent of new jobs created in 2005 initiated through projects (Wanjohi, 2009) and there is no doubt that small and medium-sized firms are the drivers of the Kenyan economy.

Internationally, based on the European Competitiveness Report and earlier research, the impact of SMEs and their projects on companies and the economy in general is significant (Turner, Ledwith and Kelly, 2010). The authors state that within the European Union, SMEs account for 99.8 percent of the number of all companies. Next to this, projects in this type of companies account for one third of turnover accounting for almost one fifth of the economy. Reflecting on the developments in project management literature, little is written about project management in SMEs (Turner, et al, 2010).

The focus has been on project management in predominantly large projects. These traditional approaches to project management will not hold for SMEs, because the characterization of big projects does not hold for smaller projects, for instance processes; the processes are formal and often bureaucratic, procedures; procedures encourage specialization and formal decision making, structure; roles are well defined and traditional project management stifles innovation and people; traditional project management is systems rather than people focused. Based on these types of characteristics, literature often ignored the fact that not all projects are the same and there is no universal set of managerial characteristics to a project (Sadeh et al, 2001). Indeed, several authors have recently expressed disappointment in the universal 'one-size-fits-all' idea Sadeh et al (2001).

2.3 Project Management Practices - Knowledge Areas as Practices

Project management practices refer to an optimal way currently recognized by project management industry to achieve a stated goal or objective; is an idea that asserts that there is a technique, method or process – through research and application – that is more effective at delivering a particular outcome than any other technique, method or process when executing a project (PMI , 2004).

Table 2.1: Overview of PMBOK Knowledge Areas and Processes

	Process Groups				
MK Areas	Initiating	Planning	Executing	Controlling	Closing
Integration	Initiation	- Project Plan Development	- Project Plan Execution	- Integrated Change Control	
Scope		- Scope Planning - Scope Definition		- Scope Verification - Scope Change Control	
Time		- Activity Definition - Activity Sequencing - Activity Duration Estimating - Schedule Development		- Schedule Control	
Cost		- Resource Planning - Cost Estimating - Cost Budgeting		- Cost Control	
Quality		- Quality Planning	- Quality Assurance	- Quality Control	
Human Resource		- Organizational Planning - Staff Acquisition	- Team Development		
Communication		- Communication Planning	- Information Distribution	- Performance Reporting	- Administrative Closure
Risk		- Risk Management Planning - Risk Identification - Qualitative Risk Analysis - Quantitative Risk Analysis - Risk Response Planning		- Risk Monitoring & Control	
Procurement		-Procurement Planning - Source Planning	- Solicitation - Source Selection - Contract Administration		- Contract Closeout

Source: PMBOK, 2008

The Project Management Body of Knowledge (PMBoK, 2008) details its own project management processes and defines nine main knowledge areas which are typical of all projects, irrespective of the project management methodology used. These areas 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 and project procurement management (PMBoK, 2008).

In this study, we focused on four knowledge areas including project cost management, project scope management, project communication management and project risk management as key project management practices affecting organisational performance of SMEs.

2.3.1 Project Scope Management

In the following paragraphs definitions and models of project scope management have been given. Kerzner (2009) sees project scope as an outcome of identifying the needs why project has been established and prioritizing those needs; sum of needs for the project. Although scope can be investigated from the originating reasons for the project, it must also consider the expected work, outcomes and deliverables. Brandon (2006) defines scope a description of the project work to be performed in terms of the desired results. On very similar lines is Cuganesan et al. (1997) scope definition states that every project is executed with a set of deliverables, and has an expected closure time and prior to this closure period, there are predetermined set of tasks and activities to complete the project successfully. These tasks constitute the scope of the project. The Project Management Institute (PMI) (2004), a provider of detailed project methodology, defines scope as the sum of the products, services and results to be provided as a project. The PMI (2004) defines scope management as the sum of processes needed to ensure a project containing all the work required, and only the work required, to complete the project successfully. It further states project scope management is primarily concerned with defining and controlling what is and what is not included in the project. PMI (2004), indicates that the following items can be considered as project scope building blocks: project and product objectives, product or service requirements and characteristics, product acceptance criteria, project boundaries, project requirements and deliverables, project constraints, project assumptions, initial project organization, initial defined risks, schedule milestones, initial Work Breakdown Structure (WBS), order of magnitude cost estimate, project configuration, management requirements and approval requirements.

2.3.2 Project Cost Management

PMI (2004) refers to cost project management as the processes required to ensure that the project is completed within an approved budget including resource planning, cost estimation, cost budgeting and cost allocating and controlling within the project. Langfield-Smith et al (2006) define project cost management as the improvement of an organisation's cost effectiveness by understanding and managing the real causes of cost during a project's life cycle. They contend that although the predominant focus in cost management is on costs, it also endeavours to improve other aspects of performance such as quality and delivery. Drury (2008) defines project cost management as those actions that project managers take to reduce costs in projects leading to a process that is more effective and efficient, which has obvious cost reduction outcomes, process improvements and where the ideal situation is to take action that both reduces project costs and enhances customer satisfaction. Hilton et al (2001) state that project cost management is a philosophy of seeking increased customer value at a reduced cost, an attitude that all project costs are caused by management decisions and a reliable set of techniques that increases value and reduces project costs. According to Hansen and Mowen (2003), cost management identifies, collects, measures, classifies and reports information that is useful to managers in costing, planning, control and decision making.

For the purposes of this study, project cost management is defined as those actions taken by the project managers for estimating, allocating, and controlling costs within the project.

2.3.3 Project Communications Management

Project Communication Management is the knowledge area that employs the processes required to ensure timely and appropriate generation, collection, distribution, storage, retrieval and ultimate disposition of project information, PMI (2004). Gould (2009) defines it as the organisation and control of information transmitted by whatever means to satisfy the needs of the project and includes the processes of transmitting, filtering, receiving, interpreting or understanding information using skills appropriate to the application of the project environment.

Accoring to PMI (2004), project communications involves planning, executing and controlling the acquisition and dissemination of all information relevant to the needs of all project

stakeholders. Information includes project status, accomplishments, events that may affect other stakeholder or projects and so on. According to Heerkens (2001) the major project communication management involves communications planning - determining the information and communications needs of the stakeholders; who needs what information, when will they need it and how will it be given to them.

PMI (2004) introduces five processes for project communication management which include identifying stakeholders, planning communication, distributing information, managing stakeholder expectation and reporting performance.

2.3.4 Project risk management

Risk management is an activity within project management that is gaining importance because businesses are moving towards globalization and because of the increasing competition (Ahmed et al., 2007). The risk management process consists of a series of steps, which are establishing the context, identifying, analyzing, assessing, treating, monitoring and communicating risks, which allow continuous improvement of decision-making (Standards Australia, 1999). Project risk management is a structured approach for the identification, assessment, and prioritization of risks followed by planning of resources to minimize, monitor, and control the probability and impact of undesirable events (Smith and Merritt, 2002). PMBOK (2000) defines risk management as the systematic process of identifying, analyzing, and responding to project risk. It includes maximizing the probability and consequences of positive events and minimizing the probability and consequences of events adverse to project objectives (PMI, 2004).

2.4 Project Management Practices and Organisational Performance in Small and Micro Enterprises (SMEs)

Organizational performance is measured by two constructs: project performance and business performance (Mullaly, 2005). In the case of project performance, project success traditionally has been measured as project completion on time, cost, and quality performance. As projects are accomplished by teams, one of the measures of success is how much the work team was satisfied in working together (Doolen et al., 2003). Efficiency is found to be loaded highest on meeting scheduled goals and on meeting budget goals; effectiveness, on the other hand, is

associated with satisfaction measures (Dvir et al., 2006). Based on these studies, project performance is measured by two constructs: project efficiency and project effectiveness as follows: Project efficiency: meeting time and budget targets. Project effectiveness: Meeting customer expectations, team satisfaction.

Organisational performance adopted from Nahm et al. (2004) measured an organization's performance by sales growth, return on investment, market-share gain, and overall competitive position. Furthermore, Dvir et al. (2006) used similar measures for project success, such as whether a project resulted in a new line of products or services: Internal organization success factors: Savings benefits of projects, projects resulting in sales growth, and overall business performance compared with the previous year.

Project management has become a distinctive way to manage business activities nowadays (Filippov and Mooi, 2010). Project management practices adoption is becoming a key strategy for improving organisational performance of SMEs through the execution of successful projects (Rooij, 2009). Most of all, project managers are in the front-line when it comes to assuring customer satisfaction (Kirsilä et al., 2007) therefore the importance of the role of project management practices in the success of projects is emphasized.

Dvir et al. (2006) point out that organisations have reached the point where the process of increasing organisation performance requires the concentrated management attention that can be provided only by competent, committed, well-organized and knowledgeable project teams adopting project management practices. SME organisational performance requires insight on how strategy, structure, processes and project management practices interact with one another (Filippov and Mooi, 2010). Most projects conceived with a business perspective and goal focus on better results and organisational performance (Shenhar et al, 2001).

Increasing pressure for organisational performance and the need for more effective ways to realise organisation strategies are important reasons for a growing interest in the competence of project managers by adopting project management practices.

2.4.1 Project scope management relevance in organisational performance of SMEs

Defining and managing the project scope influences the project's overall success (PMI, 2004). On process area of controlling the project scope, the PMI argues that it is concerned with influencing the factors creating project scope changes and the impacts of these changes. Further the PMI maintains scope management being responsible for ensuring that proposed changes are processed through change control process. An important function of scope management, by the PMI, is scope management processes responsibility to manage actual project changes, not related to organizational change management, and integrating the changes with other controlling processes. The PMI states that uncontrolled changes are often referred as "scope creep". Scope creep is the undesired by-product of a badly managed project scope, often leading to major difficulties in projects or being a reason for project failure resulting in lost customers and reduced profits for SMEs (Dekkers & Forselius, 2007).

2.4.2 Project Cost Management and Organisational performance for SMEs

There is an increased focus on understanding profitability and costs to drive SMEs efficiency and ultimately organisation performance (Drury, 2008). According to Drury (2008), project cost management has a positive influence on organization performance as financially successful organizations depend on strict project cost control. Cost is seen as a major metric of successful project management and increased organisation performance in terms of increased profits (Mullay, 2005). Project cost management improves organization performance in terms of increase in resources control and transparency, decrease in risk (Cicmil et al., 2009).

2.4.3 Project Communication Management and Organisational Performance

Sixty percent of a project fails because of a lack of good, organized communication management (PMI, 2004). Projects having poor communication among project participants always fail to meet their aim or purpose, which can be due to overrun costs, and/or being late with delivery. As a result, project communication management is one solution that can be used to accomplish this project goal leading to better organisation performance aring from timely project completion within the budget (PMI, 2004).

Heerkens (2001) mentions that communication and documentation are natural combination as they bind the project together from start to finish and asserts that information distribution

makes needed information available to project stakeholders in a timely manner. Constant and effective communication between all the stakeholders of the projects is considered as the most vital and crucial factors in order to ensure the success of the project. It is considered as the requirement of getting the right things done in the right manners. As knowledge is considered as power, it is also important to consider that the process of sharing knowledge helps to empower every each and every stakeholders of the project for the support resulting in greater organisation performance (Kerzner, 2009). At the end of the project, a close-out reporting will be presented in order finalize the project in the eyes of all the stakeholders as well as serve as a reference for future development.

Kerzner (2009) stresses that project success depends greatly on effective project communication management with most project management time spent in some form of communication within the project team or with the customers which is critical for greater organisation performance.

2.4.4 Project Risk Management and Organisational Performance of SMEs

Risk and risk management is a major concern for all companies, especially small and medium sized enterprises which are particularly sensitive to business risk and competition (Watt, 2007). In SMEs, the risk management function usually resides with the owner's assessment of threats and opportunities pertaining to the enterprise (Watt, 2007). According to Howell et al., 2010, effective management of risks involved in projects ensures all the aspects like successful completion of the project, customer satisfaction and it improves financial performance of the organization. To manage a project properly, by ensuring on time completion and to take full profit for SMEs it is crucial to identify, analyze, and control risks involved in this regard (Howell et al., 2010).

2.5 Organisational Performance Measurement

In this study, project success is an approximation for measuring organisational results by using project management practices in the organisation in a flexible manner by finding out which practices are best for a given organisation. Overall organisational performance will be determined based on the performance of the individual project objectives; time, cost and quality performances. Two main research works that have developed formulae for the

measurement of organisational performance have been identified; Chan and Chan (2004) made use of key performance indicators (KPIs) in their study into the use of KPIs for measurement of project success. Four major areas, among others, determined the formulae that were adopted for the measurement of project performance. The areas chosen represent the dimensions that were adopted for the measurement. The major dimensions for which formulae were required for their calculation are indicated in Table 1 below. One or more indicators were required to measure the performance of each of the dimensions. Secondly, Ling et al. (2002), in developing models for predicting the performance of design-build and design-bid-build projects, made use of the performance metrics for measurement of project performance. Similar to Chan and Chan (2004) work, the formulae they adopted for measuring project performance are indicated in Table 2.2 and 2.3 below.

Table 2.2: Project Performance Measurement

Dimensions	Key Performance Indicators	Definition
Time	Construction time	Project completion date – project commencement date
	Speed of construction	Gross floor area/construction time
	Time variation	((Construction time-revised contract)*100)/ (revised contract period)
Cost	Unit cost	Final contract/gross floor area
	Percent net variable	((Net value of variations) * 100)/ (final contract sum)
Value and profit	Net present value	$\sum_{t=0}^{N} (NCF)_t/(1+r)^t$
Health and safety	Accident rate	(Total number of reportable construction site accidents)/ (total number of workers employed or man-hours worked on a specific project)*1,000

Source: Chan A. P. C. and Chan A. P. L. 2004

Table 2.3: Project Performance Measurement Formulae

Dimension	Performance Metrics	Definition
Time	Construction speed	Area/(as-built construction end date – as-built construction start date)
	Delivery speed	Area/total time

	Schedule growth	(Total time – total as planned time)/total as planned time) * 100
Cost	Unit cost	(Final Project cost/area) /index
	Cost growth	(Final project cost –contract project cost)/ contract project cost) * 100%)
	Intensity	Unit cost / total time
Quality	Turnover quality	Ease of starting up and extent of call backs, Measured by ranking (5=exceed owner's expectation; 1=not satisfactory)
	System quality	Performance of building elements, interior space and environment measured by ranking (5=exceed owner's expectation; 1=not satisfactory)
	Equipment quality	Performance of equipment (5=exceed owner's expectation; 1=not satisfactory)
Others	Owner's satisfaction	(5=exceed owner's expectation; 1=not satisfactory)
	Owner's administrative burden	(5=minimum burden; 1=very heavy burden)

Source: Adopted from Ling et al. (2002)

2.5.1 Effects of Time Performance

Time performance refers to the duration for completing a project and often, projects experience delays. In Royal Institution of Chartered Surveyors (RICS) research paper (Morledge et al., 1996) in which data was collected on 215 completed projects of commercial and industrial nature, it was found out that 63 percent were delivered late. It was contended that the lateness was mainly due to unrealistic expectation of clients about the project duration during the preconstruction stage. Ward et al. (1991) also identified that client time expectations are frequently based upon either their own experience of similar works or on advice from 'specialist advisors'. This behaviour of clients may be an indication of the adherence to or rejection of advice of project consultants, who have been formally employed to lead management projects. In situations where project consultants, considered to be project management experts, play the major role in the establishment of construction time, the effect

on project performance may be different. The actions of all parties are therefore important to the project performance.

With the use of a web-based instrument prepared to gather data related to the effects of certain variables on time overrun in commercial projects, which was sent to the Chief Executive Officers (CEO's) of 100 randomly selected construction companies, delayed progress payments was identified as a major cause of construction time overrun (Choudhury and Phatak, 2004). In view of this, the attributes of the nature and source of funds, the main area from which time for payments is mostly determined for building projects, require thorough investigation in-order to establish a number of practices that cause delays in progress payments.

Although delayed progress payment has been identified as a major cause of construction time overrun, the ability of the contractor's project manager to deal with the issue is also important to the time performance of the project. The kind of practices that contractors engage in to manage time aspect of the project therefore requires to be identified. In an investigation into construction time performance of construction projects in Australia, Walker (1995) identified the following as broad factors affecting construction time performance; effectiveness of client's representative team, effectiveness of construction management team and the scope of works. This gives rise to the need to highlight certain characteristics of the project management team members; their competence, experience, knowledge and skills.

2.5.2 Effects of Cost Performance

Cost performance has been defined as the degree to which the general conditions promote the completion of a project within the estimated budget (Bubashit and Almohawis, 1994). It covers overall costs incurred from project inception to completion. This highlights the importance that has to be attached to every project management activity carried out through every stage of the project development up to completion. Chan and Chan (2004) also argues that cost is not only confined to the tender sum and that it is the overall cost that a project incurs from inception to completion, which includes any cost arising from variations, modifications during construction period. These cost variables give indication of certain additional practices that when engaged during the project management process would have both direct and indirect implications for the project cost performance.

The number and manner in which variation orders are issued by consultants during construction is an important practice to look at. Clients who often engage in the habit of agitating for numerous design changes before practical completion also play great role in influencing the project cost. The way contractors respond to variation orders may also have implications for the project performance. In predicting the performance of design-build and design-bid-build projects, Ling et al. (2002) identified certain variables that affect cost performance. These include the number of repetitive elements contained in a project, the extent of design completion when bids are invited, and the level of paid up capital of contractors engaged.

The attitude of client towards the project cost will also determine whether the client will adhere to the advice given by designers concerning the cost advantage of having repetitive elements in designs. How contractors are usually selected (always selecting through competitive tendering or negotiated tendering) will also determine the kind of contractors that are employed to execute the projects.

The presence of certain features within a particular contract also goes a long way to determine the kind of contractors that would tender for the job and eventually win. For instance, the availability of certain facilities (such as payment of advance mobilization by client) within a given building contract may attract contractors who have low level of paid up capital or low level of ability to pre-finance a project. The level of financial capability of the winning contractor would have bearing on project performance.

2.5.3 Effects of Quality Performance

Quality performance is defined as "the totality of the features required to satisfy a given need; fitness for purpose (Parfit and Sanvido, 1993). The extent to which projects are monitored, the experience of project consultants, quality and past performance record of contractors (Kashiwagi and Parmar, 2004) and the number of variation orders issued all have effect on quality. How all these factors can be competently coordinated would be relevant to achieving satisfactory quality performance.

The project management team leader has the responsibility to ensure that these factors combine well to yield good quality performance. Quality performance has been considered as a function

of the procedures adopted during the project process (Serpell and Alarcon, 1998). Those procedures comprise the concept of procurement form and the method of tendering to the final close-out stage that will bring the project to a successful conclusion. The emphasis is on process and procedures having influence on quality of a project. The subsequent issue that arises is how often project managers, having a sense of the uniqueness of every project, tailor certain project management practices to correspond with the uniqueness of a project in order to yield good quality performance. In a research work into the factors that influence quality performance of projects, Chan and Tam (2000), using factor analysis and stepwise regression analysis, identified project management practices by the project team as the most powerful predictor of client's satisfaction with quality. An emphasis therefore needs to be given to the project management practices that are usually adopted by members of the project management team for the quality management of projects.

2.6 Decline in organisational performance due to poor projects performance

In Kenya, projects have had performance problems, some of the factors that have contributed to this include irregular release of funds for construction projects by the client Baiden-Amissah, 1999). Amoah-Mensah (2005) in his study into the role of African quantity surveyors in the achievement of New Partnership for Africa's Development (NEPAD) agenda, mentioned delayed payment by client, inadequate contract information and performance appraisal as some of the bottlenecks of optimal realization of the success of projects. In tracking the performance of the Constituency Development Fund (CDF) projects, it was identified that most projects register high failure rates. A key finding that stood out as major drawback on the success of the World Bank funded projects is the late release of funds for the projects. The construction industry is characterized by repeated delays, cost overruns and collapse of buildings (Mansfield et al., 1994). In light of these, Kashiwagi and Parmar (2004) suggested that past performance information should stand as a key indicator for predicting future performance in the construction industry. Xiao and Proverbs (2003) also contend that contractor performance is critical to the success of any construction project as it is contractors who convert designs into reality. The issue of poor project performance is attributed to a project management practices and their effect on organisational performance has to be ascertained. Ignoring the crucial

project management practices may lead to undesirable project performance leading to unsatisfied customers, lost business and as result poor organisational performance.

2.7 Conceptual Framework

Following the previous paragraphs describing the theoretical framework, a conceptual framework was developed whereby project management practices were presumed to be the project management knowledge areas (PMI, 2008) as the independent variables. This framework focuses on four knowledge areas namely: project scope management, project cost management, project risk management and project communication management and how these practices influence organisational performance as the dependent variable.

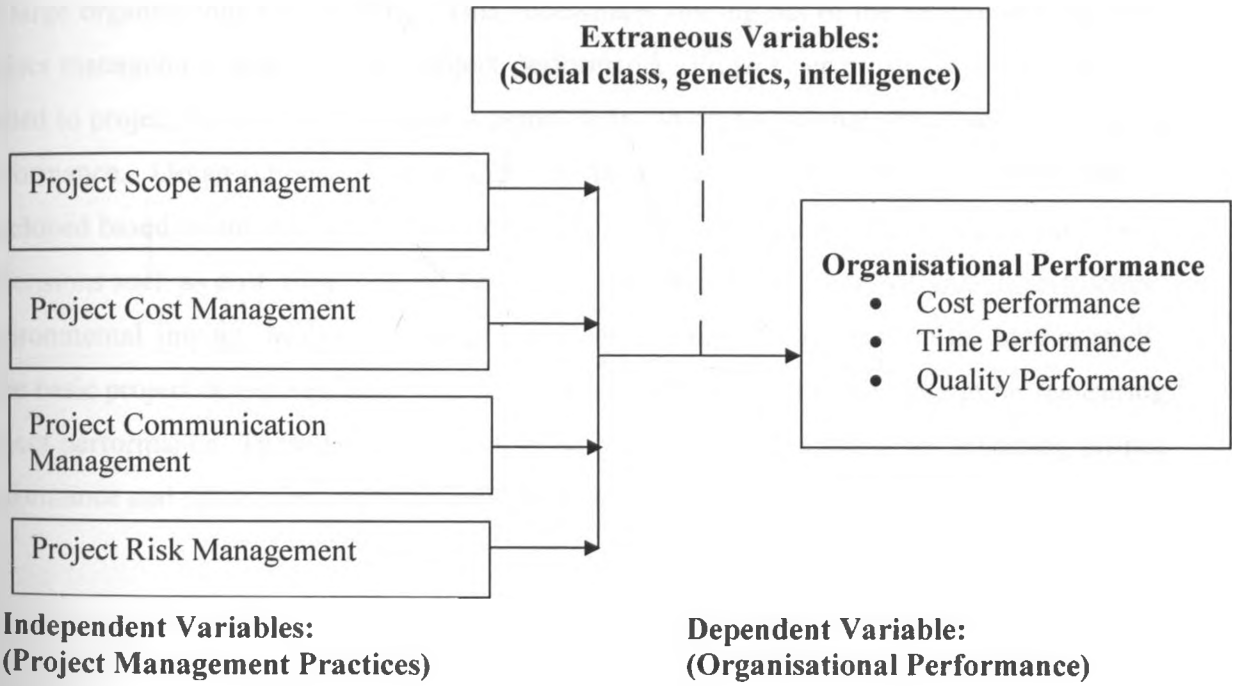

Figure 1: Conceptual Framework

According to the proposed framework, project management practises including scope management, cost management, communication management and risk management carried out are for the purposes of effectively managing projects to achieve satisfactory project performance through better time performance, cost performance and quality performance resulting in improved organisational performance. Each project team member has a function to perform within the project management process. A combination of these practices results in a

set of evolved practices within a project's life time. Through these practices adopted, an environment is created where each person on the project understands what must be delivered and how performance will be measured. This avoids the uncertainty that often permeates a project as it approaches critical delivery times. This approach integrates the project deliverables and clearly demonstrates contribution towards organisational performance outcomes.

2.8 Summary of Chapter Two

Project management practices involve carrying out the day-to-day management activities and decisions to meet set project objectives. These practices may vary from organization to organization, as emphasized by (Hobday, 2000), one size doesn't fit all. This is especially so for large organisations versus SMEs. This necessitates finding out of the relationship between project management practices and project performance. Project performance is considered to be tied to project success and this also is associated with organisational objective as well as its performance. Organisational performance is therefore measured using certain criteria developed based on the project objectives. Project performance has been measured with several dimensions such as cost, time, quality, benefits to end users, benefits to national infrastructure, environmental impact, health and safety requirements amongst other criteria. In this study, three basic project objectives, time, cost and quality, were selected as the criteria for measuring project performance. These are considered to be the overarching criteria for assessing project performance and subsequent organisational performance.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

In this chapter, the essentials of the research design and methodological model have been presented. This study adopted a methodological framework that resulted in a theoretical foundation using both qualitative and quantitative approach. Data collection strategies and instruments were developed from the initial conceptual framework by use of a questionnaire. The study investigated the internal logic through which project management practices contribute to organisational performance. The qualitative data was codified and treated using step-wise conversion to facilitate its quantitative analysis. The data collection strategy was adjusted to verify and complete the evolving framework; the process was comprehensive and interactive. Completion of the case study was followed by a more systematic and complete analysis of the data.

3.2 Research Design

The study applied qualitative and quantitative research designs. These were particularly appropriate for this research because it gave an opportunity for the problem statement to be studied in some depth within a limited time scale (Bell 1999).

First, there was a collection of qualitative data on the extent of project management practices carried out within Letan Limited and their impact on organisational performance through document analysis. Second, qualitative data on the practices were organized into categorical statements and assigned numerical values to enable a quantitative measurement of organisational performance. The effects of the project management practices on measured performance of cases of completed projects were thus determined through quantitative analytical methods such as descriptive and inferential analysis. Data for the measurement of project performance and the effect of the practices were obtained through survey questionnaire. Thus, by way of step-wise conversion, the qualitative was brought into the quantitative domain (Sarantakos, 2005).

3.3 Target Population

The target population consisted of 37 employees of Letan Limited and 22 respondents were sampled from the project management department. These were constituted as follows: 2 project consultants, 8 project leaders and 12 project members. These employees were selected opportunistically on the basis of their interaction with the project organisation at the firm.

3.4 Sample Size and Sampling Procedure

From a population of 37 employees, the researcher used a sample size of 22 employees from the project management department. For this study, purposive sampling was used as the most appropriate of the non-probability sampling techniques. This is because it allowed the researcher to decide what needed to be known and to find people were willing to provide the information by virtue of knowledge or experience (Bernard 2002, Lewis & Sheppard 2006). The project management department was crucial and the sample was drawn from it and it included project consultants, project leaders and project members working on certain projects undertaken by Letan Limited.

3.5 Data Collection Instruments

The main instrument that was used for collection of data on the impact project management practices on organisational performance was questionnaires. The questionnaire was the most appropriate tool as it allowed the researcher to collect information from a sample with diverse background; the findings remained confidential, save time and since they were presented in a paper format and there was no opportunity for bias (Kombo and Tromp, 2006).

3.6 Validity of the Instruments

Validity of an instrument refers to the extent to which it measures what it claims to measure (Mugenda & Mugenda, 2003). In other words, validity is the degree to which results obtained from the analysis of the data actually represents the phenomena under the study. The study used content validity as a measure of the degree to which data obtained from the research instruments meaningfully and accurately reflected the theoretical concept.

3.7 Reliability of the Instruments

According to Mugenda & Mugenda (2003), reliability measures the degree to which a particular measuring procedure gives similar results over a number of repeated trials. The study established the reliability by using of Cronbach alpha method. It measures internal consistency of items to the concept. Cronbach's Alpha coefficient is a statistic for internal reliability, values ranging from 0 to 1, and higher values indicate greater reliability. Researchers often use 0.6 as a minimum level (Cortina, 1993), and was the case in this study.

3.8 Data Collection Procedure

The researcher started the study after seeking and obtaining authority from the University of Nairobi to conduct research at Letan Limited. The questionnaires were self administered, the researcher distributed them to the respondents and enlightened them how to fill the forms. Respondents filled in answers in written form and the researcher then collected the forms with completed information. The questionnaires were collected after one week to ensure that answering of questionnaires were allocated enough time for the respondents to give full information.

3.9 Operational Definition of Variables

The project management practices including scope management, cost management, communication management and risk management were the independent variables. In this study, to measure impact of project management practices on organisational performance and the degree importance of these practices, a 5-point Likert scale illustrated below was used.

To measure ranking of significance of project management practice to organisational performance the employees used a 5-point scale on the stated practices where (1) = Not Significant (2) = Slightly Significant (3) = Moderately Significant (4) = Very Significant (5) = Exceedingly Significant. To measure importance of linking project scope management, project cost management, project communication management and risk management to realise better organisational performance, the respondents used a scale where (1) = Not important (2) = Slightly important (3) = Average importance (4) = Important (5) = Very Important. To measure the impact of project management practices on organisational performance, the benefits were evaluated using a 5 – point scale where (1) = Strongly disagree (2) = Disagree (3)

= Neutral (4) = Agree (5) = Strongly agree. The employees were asked to evaluate each statement in terms of their perception and expectation in relation to performance of the organization being measured.

In this study, level of organisation performance was measured using cost performance, time performance and quality performance of projects. The method developed involved the use of 11-point scale, 0.5 – 1.5, indicating the index achieved by a project. Each respondent was required to indicate the time and cost performance achieved by a selected project on the respective scale of indices. The indices were developed based on the time performance index (ratio of planned construction period to actual construction period) developed in a study into project time performance by Walker (1995). Based upon the same trend, cost performance index was also developed allowing respondents to indicate the cost performance of the project by dividing initial cost of the project by final cost of the project. Quality performance was similarly measured on an 11-point scale where each respondent indicated the extent to which the expected quality of the project was achieved whether the quality was below expectation, as expected or above expectation. The quality performance measurement method is subjective and was adopted based on Chan and Chan's (2004) work in which respondents were required to indicate their satisfaction with quality on a 7-point scale. These indices have been illustrated in tables 3.1, 3.2 and 3.3.

Table 3.1: Time Performance Index

Project completion and status achieved	Completion behind schedule					Completed on schedule	Completed ahead of schedule				
Index	0.5 and below	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.5	1.5 and above

Source: Adopted from Walker (1995).

Table 3.2: Cost Performance Index

Project cost status achieved	Completion above initial estimated cost					Completed as estimated	Completed below initial estimated cost				
Index	0.5 and below	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.5	1.5 and above

Source: Adopted from Walker (1995).

Table 3.3: Quality Performance Index

Project quality status achieved	Below expectation by					As expected	Above expectation by about				
Index	50% and below	40%	30%	20%	10%	1.0	10%	20%	30%	40%	50% and above

Source: Adopted from Chan and Chan's (2004)

3.10 Data Analysis Techniques

The data collected was organized, tabulated and analyzed using descriptive and inferential statistics. Data concerning project management practices and organizational performance was collected from the professionals working at Letan Limited operating in the project management sector. Data analysis was conducted using software SPSS 19 and Microsoft Excel 2007 by applying techniques of descriptive analysis (means and standard deviations) and inferential analysis using Pearson Product Moment correlations were computed to reveal relationships between dependent and independent variables. The researcher presented the information collected in form of tables and percentages.

3.11 Confidentiality and Ethical Considerations

Berg (2011) suggests that confidentiality is an active attempt to remove from the research records any element that might indicate the subjects' identities. The study was conducted according to the ethical codes of the University of Nairobi and standard ethical practices required of any reputable academic research (Kellehear, 1993).

According to Berg (2011), the ethical requirements for 'informed consent' in research require potential respondents formally providing knowing consent to participate in a research project as an exercise of their choice, free from any element of fraud, deceit, duress, or similar unfair inducement or manipulation. Potential participants were informed in writing about the purpose of this research project and their consent was confirmed before filling the questionnaires.

3.12 Summary of Chapter Three

This chapter has described and discussed the research design of the study and the methodology that was used to investigate the impact of project management practices on organisational performance at Letan Limited. The chapter has reviewed the relevant research design and has provided substantial reasons for using a case study approach with some descriptive aspects, and for using survey questionnaire for data collection. Having established an appropriate research design and methodology, the chapter has described the organisation selected for the study, the population available to inform the research and the purposive informant sample that was selected. Finally, the chapter has described the tools that were chosen to analyse the data and suggested how this data analysis meets the demands applied to the case study research design to establish academic rigour.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1 Introduction

The results of the research conducted were examined in this chapter, focusing on the problem of this research, which was to determine the impact of project management practices on organisational performance of small and medium size enterprises as currently applied in Letan Limited. The research results were presented by focusing on the following four areas which corresponded to the way in which the research questionnaire was constructed: First, was to assess the extent to which was important to link the various project management practices; second, was to establish the project management practices that significantly impact on organisational performance; third was to determine the effects time, cost and quality performances of projects on organisational performance and finally it was to analyse the impact of project management practices on organisational performance. Tables and percentiles were used to present the findings, descriptive and inferential statistics were used to illustrate and interpret the findings.

4.2 Response Rate

A total 22 respondents were contacted, however only 20 filled in and returned their questionnaires, hence a response rate of 90.9 percent was achieved.

Table 4.1: Composition of Respondents

Roles of respondents	Frequency	Percentage (%)
Project Consultant	2	10
Project Leader	7	35
Project team member	11	55
Total	**20**	**100**

Source: Survey data, 2012

According to Table 4.1 there were 20 respondents consisting of 2 project consultants, 7 project leaders and 11 project team members which represented 10%, 35% and 55% respectively of respondents.

4.3 Presentation of General Information

From the questionnaire, questions 1, 2, 3 and 4 aimed at giving general information of the respondents regarding their experience level, value and number of projects they had worked on as shown in tables 4.2, 4.3 and 4.4.

Table 4.2: Experience Level

Years of Experience	Frequency	Percentage (%)
0-5 years	3	15
6-10 years	7	35
11-20 years	9	45
More than 20 years	1	5
Total	**20**	**100**

Source: Survey data, 2012

Experience level of the respondents was presented in Table 4.2. It showed that majority of respondents had worked between 11 and 20 years representing 45% of the respondents, there was only one respondent who had experience of more than 20 years.

Table 4.3: Number of Projects Worked On

Number of projects worked on	Frequency	Percentage (%)
0-3 projects	1	5
4-7 projects	2	10
8-12 projects	9	45
more than 12 projects	8	40
Total	**20**	**100**

Source: Survey data, 2012

Table 4.3 indicates that 45% of the respondents had worked on between 8 and12 projects in the past 5 years. Only 5% of the respondents had worked on between 0-3 projects.

Table 4.4: Average Projects Value

Average value of projects (KShs)	Frequency	Percentage (%)
Less than 5 million	1	5
5-10 million	4	20
11-50 million	13	65
More than 50 million	2	10

Total	20	100

Source: Survey data, 2012

From the projects sampled, there was an indication that average value of the projects the respondents had worked on were between 11 and 50 million Kenya Shillings, which represented 65% of the sampled projects as per table 4.4 above.

4.4 Descriptive Data Analysis

Descriptive data analysis was used to examine relationship of variables using mean and standard deviations of the dependent and independent variables.

4.4.1 Importance of linking various project management practices

The aspect of concern for question 5 which provided an answer for the first research question was the proportion of respondents rating the level of importance of linking various project management practices in order to realise greater organisational performance. The level of importance ranged from 1 to 5 where (1) = not important and (5) = very important.

Table 4.5: Importance of Linking Project Management Practices

Importance of linking project management practices	Rank	Frequency	Percentage (%)
Not Important	1		
Slightly Important	2	1	5
Average Importance	3	2	10
Important	4	4	20
Very Important	5	13	65
Total		**20**	**100**
Mean	**4.45**		

Source: Survey data, 2012

Table 4.5 indicates that 65% of the respondents indicated that linking of the project management practices was very important. This is further seen from a grand mean score of 4.45 that showed that the respondents agreed that linking of the various project management practices for greater organisational performance was very important.

4.4.2 Project management practices influence on organisational performance

Four project management practices areas including scope management, cost management, communication management and risk management were studied to rate the level of significance of each to organisational performance in terms of project success. A 5-point scale was used to measure level of significance where (1) = Not Significant (2) = Slightly Significant (3) = Moderately Significant (4) = Very Significant and (5) = Exceedingly Significant. The scoring was done using mean values ranging from 1-5; therefore the closer a score is to 5, the more significant the practice.

In order to rate the findings of level significance of project scope management, 7 determinants were highlighted as shown on table 4.6.

Table 4.6: Project Scope Management Rating

Project scope management parameter	Mean	Standard Deviation
Project authorisation confirmed with higher authority	4.65	2.83
Identifying project objectives, deliverables, constraints and principal work activities	4.15	2.34
Establishing designated measurable project benefits and outcomes to enable quantified evaluation of project performance	3.7	1.95
Developing scope management plans and implementing them to ensure clarity of understanding and ongoing management of project scope	3.95	1.98
Managing the impact of scope change within established time, cost and quality constraints to meet project objectives	4.6	2.63
Reviewing progress and the results recorded.	3.8	2.6
Ensuring scope management issues and recommended improvements are identified, documented and passed on to higher project authority for application in future projects	3.2	2.38
Grand Mean	**4.01**	

Source: Survey data, 2012

Table 4.6 illustrates that the respondents generally agreed that project scope management was very significant; this was seen from the grand mean score of 4.01. The parameters that were seen to be most important in scope management were project authorisation confirmed with higher authority with the highest mean score of 4.65 followed by identifying project objectives, deliverables, constraints and principal work activities with a mean score of 4.6.

To determine the significance level of project cost management, 9 parameters were studied as shown on table 4.7.

Table 4.7: Project Cost Management Rating

Project cost management parameter	Mean	Standard Deviation
Determining resource requirements for individual tasks to provide a basis for attributing expenditure	4.25	2.58
Ensuring project costs are estimated to enable budgets to be developed and agreed cost management processes implemented at an appropriate level throughout the project life cycle	4.9	3.88
Ensuring cost management plans are developed and implemented to ensure clarity of understanding and ongoing management of project finances	3.45	1.06
Implementing agreed financial management procedures and processes to monitor actual expenditure and to control costs	3.65	2.14
Selecting cost analysis methods and tools to identify cost variations, evaluate options and recommend actions to higher project authority	3.7	2.16
Implementing agreed actions, monitoring and modifying them, to maintain financial and overall project objectives, throughout the project life cycle	4.7	2.94
Conducting activities to signify financial completion	3.15	3.15
Reviewing project outcomes to determine the effectiveness of cost management processes and procedures	4	1.84

Ensuring cost management issues and recommended improvements are identified, documented and passed on to higher project authority for application in future projects	4.4	4.43
Grand Mean	**4.02**	

Source: Survey data, 2012

With a grand mean of 4.02 from the findings, this indicated that project cost management is very significant in realising project success and key for ultimate organisational performance. The most important parameter was ensuring project costs are estimated to enable budgets to be developed and agreed cost management processes implemented at an appropriate level throughout the project life cycle that scored a mean of 4.9.

To assess project communication management, 8 parameters were studied as shown on table 4.8.

Table 4.8: Project Communication Management Rating

Project communication management parameter	Mean	Standard Deviation
Identifying Information requirements and ensure they are documented and analysed as the basis for communications planning	3.5	2.69
Implementing the designated project management information system, structure and procedures to ensure the quality, validity, timeliness and integrity of information and communication	3.55	1.82
Managing the generation, gathering, storage, retrieval, analysis and dissemination of information by project staff and stakeholders within established systems and procedures to aid decision making processes throughout the project life cycle	4.6	2.59
Ensuring designated information validation processes are monitored and controlled, and agreed modifications implemented to optimise quality and accuracy of data	3.4	2.22
Implementing processes to promote continuous improvement of staff and overall project effectiveness	3.7	2.08

Maintaining customer relationships within established guidelines to ensure clarity of understanding of objectives and to reduce conflict throughout the project life cycle	3.9	2.62
Ensuring finalisation activities are conducted to ascertain agreed ownership of and responsibility for information	3.45	1.62
Ensuring project outcomes are reviewed to determine the effectiveness of management information and communications processes and procedures	3.65	1.93
Grand Mean	**3.72**	

Source: Survey data, 2012

Project communication management was seen to be moderately important with a grand mean score of 3.72. The least significant determinant in communication management was ensuring designated information validation processes are monitored and controlled, and agreed modifications implemented to optimise quality and accuracy of data scoring a mean of 3.4.

To rank the significance of project risk management 8 determinants were studied.

Table 4.9: Project Risk Management Rating

Project risk management parameter	Mean	Standard Deviation
Identifying potential, perceived and actual risk events as the basis for risk management planning	3.6	2.5
Using established risk management techniques and tools to analyse risk events, assess options and recommend preferred risk approaches	3.75	2.23
Developing plans agreed with stakeholders and communicating to ensure clarity of understanding and ongoing management of risk factors	3.75	2.58
Ensuring the project is managed in accordance with established project and risk management plans	3.7	2.35
Monitoring progress against project plans to identify variances and recommend responses to higher project authority for remedial action	3.25	2.37

Ensuring agreed risk responses are implemented and plans modified to reflect changing project objectives in an environment of uncertainty	4	2.87
Ensuring project outcomes are reviewed to determine effectiveness of risk management processes and procedures	3.75	2.62
Ensuring risk issues and recommended improvements are identified and documented	4.25	2.34
Grand Mean		**3.76**

Source: Survey data, 2012

From table 4.9 the findings indicate that the respondents found risk management to be moderately important as per the grand mean score of 3.76.

In general the project management practices that were found to be most significant to realise better organisational performance were project cost management followed by project scope management with grand mean of 4.02 and 4.01 respectively.

4.4.3 Overall Performance Trends of Time, Cost and Quality Performances of Projects

A computed index of less than 1.0 indicates underperformance or below trend whilst 1.0 or above is according to trend or above trend respectively. In order to know the trend of performance of sampled projects obtained tables 4.10, 4.11 and 4.12 below give a descriptive summary of the performance indices obtained from the sampled projects.

Table 4.10: Time Performance Trend of Projects

Time Performance Index	Number of Projects	Percent (%)	Overall Trend Performance		
			Status	Number of projects	Percent (%)
0.5	2	40.0	Below Expectation	17	85
0.6	1	10.0			
0.7	7	5.0			
0.8	7	10.0			
0.9	0	25.0			
1.0	3	10.0	As Expected	3	15
1.1			Above Expectation	-	-
Total	**20**	**100.0**		**20**	**100**
Mean Time Index			**0.755**		

Source: Survey data, 2012

Table 4.11: Cost Performance Trend of Projects

Cost Performance Index	Number of projects	Percent (%)	Overall Trend Performance		
			Status	Number of projects	Percent (%)
0.6	1	5	Below Expectation	4	20.0
0.9	3	15			
1.0	8	40	As Expected	8	40.0
1.1	2	10	Above Expectation	8	40.0
1.2	6	30			
1.5	0	0			
Total	**20**	**100.0**		**20**	**100.0**
Mean Cost Index			**1.035**		

Source: Survey data, 2012

Table 4.12: Quality Performance Trend of Projects

Quality Performance Index	Number of projects	Percent (%)	Overall Trend Performance		
			Status	Number of projects	Percent (%)
0.8	0	0	Below Expectation	3	10
0.9	2	15			
1.0	11	55	As Expected	11	55
1.1	1	10	Above Expectation	6	35
1.2	6	20			
1.5	0	0			
Total	**20**	**100**		**20**	**100.0**
Mean Quality Index			**1.055**		

Source: Survey data, 2012

Tables 4.10, 4.11 and 4.12 show time performance, cost performance and quality performance of the projects at 85%, 20% and 10% respectively had performed below trend. The trend percentages obtained indicated that project performance below trend was prevalent amongst the projects. However, trend of quality performance of all the projects was better than cost and time performance with a mean quality index of 1.055. This may be due to the inclination of clients towards attaining projects of satisfactory quality rather than projects constructed on or ahead of schedule and as budgeted or below budget. There is an indication that whilst time and cost objective can be compromised on, quality is difficult to sacrifice. Table 4.11 shows that

time performance lagged behind with a mean time index of 0.77 where as the cost and quality performance trends were generally as expected with a mean of 1.035 and 1.055 respectively.

4.4.4 Impact of project management practices on organisational performance

In order to assess the impact of project management on organisational performance, question 41 on the questionnaire was used. Respondents were asked to rate the importance of engaging in project management practices to realise increased organisational performance. According to table 4.13 below 55% of the respondents strongly agreed to the statement and 40% agreed. A mean score of 4.5 indicated that the respondents were in strong agreement that engaging in project management practices increases organisational performance.

Table 4.13: Project Management Practices and Organisational Performance

Extent of Agreement	Rank	Frequency	Percent (%)
Strongly disagree	1	0	0
Disagree	2	0	0
Neutral	3	1	5
Agree	4	8	40
Strongly agree	5	11	55
Total		**20**	**100**
Mean			**4.5**

Source: Survey data, 2012

In order to further assess the impact of project management practices on organisational performance, several statements (42 – 46) on the questionnaire were analysed and findings revealed that benefits were accrued as presented in table 4.14.

Table 4.14: Benefits Accrued from Engaging in Project Management Practices

Benefits of project management practices	Mean	Standard deviation
Reduce project delivery costs and ensures increased profits	4.65	2.38
Higher degree of project successes increases the competitive advantage and market share	4.05	2.71
Better understanding of project requirement leading to motivated staff	3.4	1.69

Produce quality deliverables	4.15	1.37
Provide customer advantage arising from meeting customer expectations	4.25	2.1
Grand Mean	**4.1**	

Source: Survey data, 2012

According to table 4.16 a grand mean score of 4.1 shows that the responds generally agreed that there were benefits accruing from engaging in project management practices leading to better organisational performance. The benefit that was ranked highest was reduced project delivery cost ensured increased profits which realised a mean score of 4.65. The least benefit according to the respondents was that it led to better understanding of project requirement leading to motivated staff which had a mean score of 3.4.

4.5 Inferential Data Analysis

Correlation coefficients (Pearson Product Moment Correlations) were computed using SPSS to determine relationship between the project management practices and organisational performance. Cost, time and quality indices were used for measuring organisational performance. Tables 4.15, 4.16, 4.17 and 4.18 illustrate the findings of the relationship between the variables. A positive correlation coefficient gives an indication that there is a positive relationship between the project management practice and organisational performance and a negative correlation coefficient negative relationship. Variables are said to be very highly correlated, if the correlation coefficient magnitude lies between 0.9 and 1.0.

4.15: Cross Tabulation Analysis – Scope Management and Organisational Performance

	Time Index (Y_1)	**Cost Index (Y_2)**	**Quality Index (Y_3)**
Mean (X_1)	4.35	4.35	4.35
Mean (Y)	0.76	1.04	1.06
Standard Deviation (X_1)	0.75	0.75	0.75
Standard Deviation (Y)	0.14	0.15	0.11
Correlation Coefficient (Pearson Product Moment Correlation)	**0.56**	**0.87**	**0.36**

Source: Survey data, 2012

According to table 4.15, there was a moderate positive relationship between scope management and time performance as shown with a correlation coefficient of 0.56. Scope management and cost performance were highly correlated with a correlation coefficient of 0.87. However scope management and quality performance were least correlated with correlation coefficient of 0.36.

4.16: Cross Tabulation Analysis – Cost Management and Organisational Performance

	Time Index (Y_1)	Cost Index (Y_2)	Quality Index (Y_3)
Mean (X_2)	4.55	4.55	4.55
Mean (Y)	0.76	1.04	1.06
Standard Deviation (X_2)	0.69	0.69	0.69
Standard Deviation (Y)	0.14	0.15	0.11
Correlation Coefficient (Pearson Product Moment Correlation)	**0.64**	**0.91**	**0.83**

Source: Survey data, 2012

Table 4.16 shows cost management was highly correlated to time, cost and quality performances with correlation coefficients of 0.64, 0.91 and 0.83 respectively. The highest relationship was between cost management and cost performance that had the highest correlation coefficient of 0.91.

4.17: Cross Tabulation Analysis – Communication Management and Organisational Performance

	Time Index (Y_1)	Cost Index (Y_2)	Quality Index (Y_3)
Mean (X_3)	4.1	4.1	4.1
Mean (Y)	0.76	1.04	1.06
Standard Deviation (X_3)	0.64	0.64	0.64
Standard Deviation (Y)	0.14	0.15	0.11
Correlation Coefficient (Pearson Product Moment Correlation)	**0.05**	**0.07**	**0.01**

Source: Survey data, 2012

Table 4.17 shows there was a low relationship between communication management and time, cost and quality performances. The least correlated variables were communication management and quality performance with a correlation coefficient of 0.01.

4.18: Cross Tabulation Analysis – Risk Management and Organisational Performance

	Time Index (Y_1)	Cost Index (Y_2)	Quality Index (Y_3)
Mean (X_4)	4	4	4
Mean (Y)	0.76	1.04	1.06
Standard Deviation (X_4)	0.75	0.75	0.75
Standard Deviation (Y)	0.73	0.73	0.73
Correlation Coefficient	**0.69**	**0.51**	**0.35**

Source: Survey data, 2012

Table 4.18 illustrates that there was a positive relationship between risk management and time cost and quality performances as shown with a correlation coefficient of 0.69, 0.51 and 0.35. Risk management was highly correlated with time performance scoring a correlation coefficient of 0.69. There was low relationship between quality performance and risk management having a correlation coefficient of 0.35, whereas there was a moderate relationship between risk management and cost performance with a correlation coefficient of 0.51.

4.6 Assessing Reliability

Cronbach's Alpha coefficient is a statistic for internal reliability that together cover the specific factor, values ranging from 0 to 1, and higher values indicate greater reliability. Researchers often use 0.6 as a minimum level, and which was used this study. This is a measure of internal consistency of items to the concept. It was used to measure the reliability of items in this study.

4.6.1 Project Management Practices Reliability Statistics

Table 4.19: Reliability Statistics for Project Management Practices

Project Management Practice	Number of Items	Cronbach's Alpha
Project scope management	7	0.711
Project cost management	9	0.797
Project communication management	8	0.630
Project risk management	8	0.613

Source: Survey data, 2012

Table 4.20: Results of Reliability for All Dimensions of Project Management Practices

Cronbach's Alpha	Number of Items
0.688	32

Source: Survey data, 2012

Table 4.19 shows the results of reliability test for each project management practices. It was observed that all of the alpha values are more than 0.6. According to table 4.19, alpha value for project cost management was 0.797 which was the highest alpha value among project management practices. Computed alpha values results showed that Cronbach's alpha was 0.688 for all the 32 dimensions of project management practices as per table 4.14. These statistics reveal that internal consistency of items to the concept was good.

4.6.2 Organisational Performance Indices Reliability Statistics

Table 4.21: Reliability Statistics for Organisational Performance Indices

Performance Indicator	Cronbach's Alpha
Cost performance	0.911
Time performance	0.752
Quality performance	0.630
Cronbach's Alpha (All 3 indicators)	**0.764**

Source: Survey data, 2012

Table 4.21 shows the Cronbach's alpha values for each organisational performance indices including cost performance, time performance and quality performance. It was observed that the all alphas were more than 0.630; therefore, internal consistency of items to the concept was

acceptable. Table 4.21 further indicates the alpha value for all the dimensions of organisational performance was 0.764.

4.7 Summary

In this chapter, key points addressed the research objectives outlined in chapter one. It was evident that Letan Limited is an SME from the general information that was gathered in the study. The results further showed that it was important to link the various project management practices for greater performance. Project scope management and project cost management were the practices that impacted most on organisational performance from the grand mean scores realised. The research revealed that there was underperformance in terms of time taken to complete projects. Finally there was general agreement amongst respondents that engaging in project management practices led to accrued benefit; the most highlighted benefit was seen as reduced project delivery costs that led to increased profits and hence better organisational performance.

CHAPTER FIVE
SUMMARY, DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The principal aim of this research was to find out the impact of project management practices on organisational performance of SMEs. Four objectives and research questions were thus set out in order to achieve this aim within the context of literature presented in Chapter Two. This chapter highlights the key findings of this research and includes recommendations and suggestions on areas for future research.

5.2 Summary of Findings

5.2.1 Assessing the level of importance of linking various project management practices

A key finding from the empirical study was that was very important to link the project management practices in order to realise greater organisational performance. Table 4.5 showed that 65% of the respondents indicated that linking of the project management practices was very important.

5.2.2 Project management practices significantly affecting organisational performance

In general project management practices were found to be significant in realising increased organisational performance through better project delivery results. Project cost management followed by project scope management were found to be very significant with a grand mean score of 4.02 and 4.01 respectively. Project communication management and project risk management were seen to be moderately important with grand mean scores of 3.72 and 3.76 respectively.

5.2.3 Effects of time, cost and quality performances of projects on organisational performance

A trend of project performance was obtained from computation of time, cost and quality performance of the projects within the organization as criteria for measuring organisation performance. With regards to time performance 85%, out of the 20 projects obtained from the

organization, were below trend as these projects completed behind schedule. Also, 20% of the projects were completed above budget and thus performed below trend. With regards to quality performance 90% of the projects performed above trend. Satisfaction with the general quality of the projects was found to be high.

5.2.4 The impact of project management practices on organisational performance

A profile regarding the impact of project management practices was presented in section 4.7 and 4.8. 55% of the respondents strongly agreed and 40% that engaging in project management practices increased organisational performance. Further, findings showed that majority of the respondents, from a grand mean of 4.1, were in agreement to benefits accrued from engaging in project management practices which resulted in better organisational performance.

5.3 Discussion of findings

5.3.1 Survey Reliability

According to Cortina (1993), most studies use Cronbach alpha of 0.6 or higher as a positive indication of survey reliability. The calculated Cronbach alphas of 0.688 for project management practices and 0.764 for organisational performance indices indicated an acceptable internal consistency associated with the research instrument (questionnaire) in this research.

5.3.2 Sample Characteristics

The target sample size for this research was 22; however the actual sample size achieved was 20. The respondent types within the sample were well distributed and there is no reason to believe that results of the survey would have been substantially affected by the 2 respondents who failed to participate. In general the respondents exhibited moderate to high experience levels with majority of the respondents having works on between 8 and 12 projects with an average value of between 11 and 50 million Kenya Shillings. This moderate to high experience levels offers depth to findings of this research within this sector.

5.3.3 Importance of Linking Project Management Practices

Importance of linking the various project management practices was found to be very important from the results with 85% of the either strongly agreed or agreed. Kerzner (2009) asserts that

project management practices and processes must be linked to realise successful completion of projects.

5.3.4 Project Management Practices Significance to Organisational Performance

Project scope management was seen to be significant in impacting to organisational performance. Majority of the respondents agreed that the most significant scope management practice was managing the impact of scope change within established time, cost and quality constraints to meet project objectives, a mean score of 4.65 was realised in this practice. Theory reviewed (PMI, 2004) clearly indicated that project scope management is mainly concerned with controlling and managing scope changes to prevent scope creep.

In regard to cost management, most of the respondents agreed that the most significant practice was ensuring project costs were estimated to enable budgets to be developed and agreed cost management processes implemented at appropriate levels throughout the project life cycle. Dury (2008) confirms results as he asserts that financially successful organisations depend on strict project cost control.

Project communication management was generally seen to be moderately significance towards organisational performance. However, communication practice of gathering storage retrieval analysis and dissemination of information by project staff and stakeholders within established systems and procedures to aid in decision making processes throughout the project life cycle was agreed by majority of the respondents to be exceedingly significant (mean of 4.9) towards successful projects and hence improved organisational performance. These results are supported by literature from (Kerzner, 2009) insinuating the constant and effective communication amongst all project stakeholders is crucial for project success.

Ensuring risk issues and recommended improvements were identified and documented was seen as the most significant project risk management practice by most responds with the highest mean score of 4.25. These results concur with literature (Howell et al. 2010) reviewed that indicate that it is crucial to identify, analyse and control risks to realise successful completion of project that drive improved organisational performance.

5.3.5 The effects of cost time and quality performance on organisational performance

The results showed that time performance, cost performance and quality performance of the projects had performed below trend at 85%, 20% and 10% respectively. The results showed that 35% were performance was above expectation of the customers confirming that quality performance was given the most weight by the respondents. This result supports the previous research findings that quality performance has been considered as a major function of the procedures adopted during the project process (Serpell and Alarcon, 1998).

5.3.6 The Impact of Project Management Practices on Organisational Performance

According to results 55% of the respondents strongly agreed that engaging in project management practices increases organisational performance and 40% agree. Furthermore it was seen that majority of the respondents agreed that engaging in project management practices accrued benefits and the most significant benefit was that it led to reduced project delivery costs leading to increased profits. The findings agree with earlier literature reviewed that stated that organisational performance is measured by two constructs including project performance and business performance (Mullaly, 2005). Results of correlation analysis computed to determine relationship between the project management practices and organisational performance showed cost management was highly correlated to time, cost and quality performances with correlation coefficients of 0.64, 0.91 and 0.83 respectively. The highest relationship was between cost management and cost performance that had the highest correlation coefficient of 0.91. According to Chan and Chan (2004) importance has to be attached to every project management activity carried out through every stage of the project development up to completion. The correlation analysis results conform to this theory and show that most practices are positively correlated to project performance which ultimately drives organisational performance.

5.4 Conclusions

The purpose of this research was to establish the impact of project management practices on the organisational performance measured in terms of time, cost and quality performances of projects, of small and medium size enterprises (SMEs). The first research question posed was "to what extent is it important to link the various project management practices in order to

realise greater organisational performance?" The key finding from the research was that it was important to link the various project management practices to realise successful completion of projects leading to better organisational performance. The second research question posed was "what project management practices used by Letan Limited significantly impact on its organisational performance?" All project management practices were found to be significant to realise better organisational performance however project cost management followed by project scope management were the most significant. The third research question posed was "How effective are time, cost and quality performance on organisational performance at Letan Limited?" The findings show that time performance lagged behind where as the cost and quality performance trends were generally as expected and very important in realising improved organisational performance. The fourth question posed was "What is the impact of project management practices on organisational performance?" The key finding was that engaging in project management practices had a positive impact on organisational performance as benefits which improved organisational were realised.

5.5 Recommendations

The objective of this section is to highlight recommendations, applicable to the scope of this research, to improve the effectiveness of project management practices on project and organisational performance. It is recommended that project management practices should be applied systematically to the project cycle from initiation to the close out stage of projects in SMEs, to realise greater benefits.

It is recommended that more attention be placed on organising project management practices according to their impact and influence. Project cost management and project scope management practices should receive immediate priority due to their great on project and subsequent organisational performance. More emphasis should be put on communication and risk management by developing plans for effective communication and risk handling when carrying out projects.

More organisation performance metrics recently developed in other research works like benefit to end users, benefit to national infrastructure should be included for performance measurement. With this, the projects should not necessarily be organization based and will be more useful to all stakeholders.

Embracing a tactical approach to engaging in project management practices is recommended through implementing customer satisfaction surveys, meetings and communication effectiveness evaluation forms and analysing the turnaround time for outstanding issues and informally through listening observing and conversing with relevant parties.

5.6 Areas of further studies

During this research certain areas have been identified for potential future research including little research material is available for assessing impact of project management practices on organisational performance of SMEs. Future research in this field would help would help project management to better tailor the project plans to fit small organisations with less resources.

Further research if needed to explore the concept of improving project management practices in the areas business strategy integration, plans and evaluation.

Finally more research is needed to examine and evaluate project management practices impact on organisation performance in various SME sizes across all sectors in Kenya.

5.7 Summary

This research has provided insights into the process of engaging in project management practices. The results can be of immense use to organisations within the research scope. SMEs should focus more engaging in project management practices, with the research providing an indication that some practices carry more weight than others and therefore efforts should be focused to the more important practices.

To develop project management practices there is need for a tactical approach that integrates business objectives in order to realise greater organisational performance. The results of this research offered SMEs the opportunity to improve project performance and the likelihood of improved organisation performance

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APPENDIX I: TRANSMITTAL LETTER FOR DATA COLLECTION

Date: 30th October 2012

TO WHOM IT MAY CONCERN

Dear Sir/Madam:

RE: PARTICIPATION IN DATA COLLECTION FOR RESEARCH STUDY

This study is being conducted by Millicent Ollows, a student undertaking Masters of Arts in Project Planning and Management at the University of Nairobi. The aim is to better understand: **the impact of project management practices on organisational performance of small and medium size enterprises**, and Letan Limited has been selected for the case study.

Please complete the enclosed questionnaire which I will collect after one week. The questionnaire will take approximately 45 – 60 minutes to complete. The validity of the results depends on obtaining a high response rate therefore your participation is crucial to the success of this study. Returning of the questionnaire indicates your consent to participate in this study. All information supplied will be treated in strict confidence and you will not be identifiable in any report of the research.

Your assistance and cooperation will be highly appreciated towards this study which will be of invaluable importance to policy makers both in the private and public sector and academicians for further research in the project management field.

Yours Faithfully,

Millicent Ollows
Student Researcher
University of Nairobi
P.O.Box 445-00100
NAIROBI
Phone: 0721 602132

APPENDIX II: QUESTIONNAIRE

The purpose of this research is to investigate the impact of project management practices on organisational performance of small and medium size enterprises.

Please note that your responses will be kept confidential and no respondent will be identified to any other person.

Part A: **General Information and level of importance of linking various project management practices in order to realise greater organisational performance.** Please respond by ticking appropriate box (❒)	
1. Which of the following best describe your role in project within Letan Limited?	❒Project consultant ❒Project leader ❒Project team member
2. Years of experience	❒0-5 ❒6-10 ❒11-20 ❒More than 20
3. Total number of projects worked on in the last 5 years	❒0-3 ❒4-7 ❒8-12 ❒more than 12
4. Average size of projects worked on (KShs)	❒ Less than 5 million ❒ 5-10 million❒ 11-50 million ❒ More than 50 million
5. To what extent is it important to link project scope management, project cost management, project communication management and risk management to realise better organisational performance? ❒ **(1) = Not important** ❒ **(2) = Slightly important** ❒ **(3) = Average importance** ❒ **(4) = Important** ❒ **(5) = Very Important**	

Part B: Ranking significance of project management practices to organisational performance Please insert the relevant value (number) adjacent to the practice	
Project Scope Management **(1) = Not Significant (2) = Slightly Significant (3) = Moderately Significant (4) = Very Significant (5) = Exceedingly Significant**	**Number?**
6. Project authorisation confirmed with higher authority	
7. Identifying project objectives, deliverables, constraints and principal work activities	
8. Establishing designated measurable project benefits and outcomes to enable quantified evaluation of project performance	

9. Developing scope management plans and implementing them to ensure clarity of understanding and ongoing management of project scope	
10. Managing the impact of scope change within established time, cost and quality constraints to meet project objectives	
11. Reviewing progress and the results recorded to assess the effectiveness of scope management procedures	
12. Ensuring scope management issues and recommended improvements are identified, documented and passed on to higher project authority for application in future projects	
Project Cost Management **(1) = Not Significant (2) = Slightly Significant (3) = Moderately Significant (4) = Very Significant (5) = Exceedingly Significant**	**Number?**
13. Determining resource requirements for individual tasks to provide a basis for attributing expenditure	
14. Ensuring project costs are estimated to enable budgets to be developed and agreed cost management processes implemented at an appropriate level throughout the project life cycle	
15. Ensuring cost management plans are developed and implemented to ensure clarity of understanding and ongoing management of project finances	
16. Implementing agreed financial management procedures and processes to monitor actual expenditure and to control costs	
17. Selecting cost analysis methods and tools to identify cost variations, evaluate options and recommend actions to higher project authority	
18. Implementing agreed actions, monitoring and modifying them, to maintain financial and overall project objectives, throughout the project life cycle	
19. Conducting activities to signify financial completion	
20. Reviewing project outcomes to determine the effectiveness of cost management processes and procedures	
21. Ensuring cost management issues and recommended improvements are identified, documented and passed on to higher project authority for application in future projects	
Project Communication Management **(1) = Not Significant (2) = Slightly Significant (3) = Moderately Significant (4) = Very Significant (5) = Exceedingly Significant**	**Number?**
22. Identifying Information requirements and ensure they are documented and analysed as the basis for communications planning	

23. Implementing the designated project management information system, structure and procedures to ensure the quality, validity, timeliness and integrity of information and communication	
24. Managing the generation, gathering, storage, retrieval, analysis and dissemination of information by project staff and stakeholders within established systems and procedures to aid decision making processes throughout the project life cycle	
25. Ensuring designated information validation processes are monitored and controlled, and agreed modifications implemented to optimise quality and accuracy of data	
26. Implementing processes to promote continuous improvement of staff and overall project effectiveness	
27. Maintaining customer relationships within established guidelines to ensure clarity of understanding of objectives and to reduce conflict throughout the project life cycle	
28. Ensuring finalisation activities are conducted to ascertain agreed ownership of and responsibility for information	
29. Ensuring project outcomes are reviewed to determine the effectiveness of management information and communications processes and procedures	
Project Risk Management **(1) = Not Significant (2) = Slightly Significant (3) = Moderately Significant (4) = Very Significant (5) = Exceedingly Significant**	**Number?**
30. Identifying potential, perceived and actual risk events as the basis for risk management planning	
31. Using established risk management techniques and tools to analyse risk events, assess options and recommend preferred risk approaches	
32. Developing plans agreed with stakeholders and communicating to ensure clarity of understanding and ongoing management of risk factors	
33. Ensuring the project is managed in accordance with established project and risk management plans	
34. Monitoring progress against project plans to identify variances and recommend responses to higher project authority for remedial action	
35. Ensuring agreed risk responses are implemented and plans modified to reflect changing project objectives in an environment of uncertainty	
36. Ensuring project outcomes are reviewed to determine effectiveness of risk management processes and procedures	
37. Ensuring risk issues and recommended improvements are identified and documented	

Part C: Effectiveness of project management practices in terms of time, cost and quality performance in Letan Limited

Please select one project, executed within your organization, satisfying the following criteria and provide the subsequent performance information on it; the project should be substantially completed (should be practically completed or handed over).

38. Time Performance of Project

In the table below, please indicate the time performance of the selected project by ticking its corresponding time performance index obtained. (Alternatively you may provide the figures in the formula below).

Time Performance Index = (Planned Contract Period) / (Actual Contract Period)

Project completion and status achieved	Completion behind schedule					Completed on schedule	Completed ahead of schedule				
Index	0.5 and below	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.5	1.5 and above
Please tick											

39. Cost Performance of Project

In the table below, please indicate the cost performance of the selected project by ticking its corresponding cost performance index obtained. (Alternatively you may provide the figures in the formula below).

Cost Performance Index = (Initial Project Cost) / (Final Project Cost)

Project cost status achieved	Completion above initial estimated cost					Completed as estimated	Completed below initial estimated cost				
Index	0.5 and below	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.5	1.5 and above
Please tick											

40. Quality Performance of Project

In the table below, please indicate the quality performance of the selected project by ticking its corresponding quality performance margin obtained. Please note that quality performance margin is, in your own estimation, the extent to which the quality of the project deviated from what was expected.

Project quality status achieved	Below expectation by					As expected	Above expectation by about				
Index	50% and below	40%	30%	20%	10%	1.0	10%	20%	30%	40%	50% and above
Please tick											

Part D: Analysing the impact of project management practices on organisational performance	
41. To what extent do you agree with the statement "engaging in project management practices increases organisational performance"? Please tick the appropriate answer **(1) = Strongly disagree (2) = Disagree (3) = Neutral (4) = Agree (5) = Strongly agree**	
Please rate the following benefits arising from project management practices Please insert the relevant value (number) to the benefits **(1) = Strongly disagree (2) = Disagree (3) = Neutral (4) = Agree (5) = Strongly agree**	**Number?**
42. Reduce project delivery costs and ensures increased profits	
43. Higher degree of project successes increases the competitive advantage and market share	
44. Better understanding of project requirement leading to motivated staff	
45. Produce quality deliverables	
46. Provide customer advantage arising from meeting customer expectations	
Please rank importance of the following project management practices on organisational performance of the selected projects. Please insert the relevant value (number) adjacent to the practice **(1) = Not important (2) = Slightly important (3) = Average importance (4) = Important (5) = Very Important**	**Number?**
47. Projects scope management	
48. Project cost management	
49. Project communication management	
50. Project risk management	

Source: Researcher (2012)

APPENDIX III - PERFORMANCE INDICES AND POINTS INDICATING PROJECT MANAGEMENT PRACTICE EFFECT OBTAINED PROJECT BY PROJECT FOR CORRELATION ANALYSIS

VARIABLES		PROJECTS SAMPLED AT LETAN LIMITED																			
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Risk Management (X_4)	INDEPENDENT	3	4	4	4	4	4	2	4	4	5	3	4	4	5	4	4	5	4	5	4
Communication Management (X_3)	INDEPENDENT	4	5	4	4	4	4	4	4	4	5	3	4	4	5	3	4	3	5	4	5
Cost Management (X_2)	INDEPENDENT	5	4	5	5	5	5	5	5	4	4	5	5	5	5	3	4	5	5	4	3
Scope Management (X_1)	INDEPENDENT	4	4	5	5	5	5	4	5	3	5	3	4	5	4	3	4	4	5	5	5
Time index (Y_1)	DEPENDENT	0.5	0.7	0.7	0.8	0.5	0.7	1	0.6	0.8	0.8	0.7	1	0.8	0.7	0.8	1	0.7	0.8	0.7	0.8
Cost index (Y_2)	DEPENDENT	1	1.1	1.2	1	1.2	1	1	1	1.2	1.2	1.1	0.9	1	0.6	0.9	1	0.9	1	1.2	1.2
Quality index (Y_3)	DEPENDENT	0.9	1.2	1	1	1.2	1	0.9	1.2	1	1	1	1	1	1	1.2	1.2	1	1	1.2	1.1