The School of Management Studies
Indira Gandhi National Open University

Assessment of Project Management Practices in Selected Architectural Design Firms in Addis Ababa

By

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CERTIFICATE OF ORIGINALITY

This is to certify that the project titled **"Assessment of Project Management Practices in selected Architectural Design firms in Addis Ababa"** is an original work of the student and is being submitted in partial fulfillment for the award of Master's Degree in Business Administration of Indira Gandhi National Open University. This report has not been submitted earlier either to this university or to any other University/Institution for the fulfillment of the requirement of a course of study.

Signature of Advisor	Signature of Student
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Date: _____	Date: _____

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LIST OF TABLES & FIGURES

ACRONYMS

ANSI	American National Standard Institute
APMBOK	Association for Project Management Body of Knowledge
ARCH-PMMM	Architectural Project Management Maturity Model
BS	British Standards
GAPPS	Global Project Management Framework
GPBSPMP	Global Performance Based Standard for Project Management Personnel
IEEE	Institute of Electrical and Electronics Engineers
IGNOU	Indira Gandhi National Open University
ISO	International Standards Organization
NCSPM	National Competency Standards for Project Management
PCM	Project Cost Management
PCOM	Project Communication Management
PDT	Project Development Team
PHRM	Project Human Resource Management
PIM	Project Integration Management
PM	Project Management
PMBOK	Project management Book of Knowledge
P2M	Project & Program management for enterprise innovation
PMP	Project Management Practice
PPM	Project Procurement Management
PQM	Project Quality Management
PRINCE 2	Project in controlled environments
PRM	Project Risk Management
PSM	Project Scope Management
PSTM	Project Stakeholder Management
PTM	Project Time Management
OGC PMMM	Office of Government Commerce Project Management Maturity Model
SPSS	Statistical Package for Social Science

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ABSTRACT

This research assesses the project management practices in selected private Architectural Design firms in Addis Ababa. The purpose of this study was to assess the extent to which project management processes are practiced in private Architectural design firms and the impact of ISO certification, number of staff and years of experience on overall Project Management practice.

Though multifold its socio-economical contributions and its significance in affecting the livelihood of many, generally, the delivery process of construction is accused for inefficiency and ineffectiveness. One suggested approach to reduce these sub-par performances is for the industry to improve the project management practice level of private architectural design firms; often measured in Design project management practice levels based on PMI Knowledge areas.

The method used to carry out this research was solicitation of information from the CEOs, Partners, Senior Architects, and Project Managers of private Architectural Design firms through structured questionnaire. A list of demographical questions was asked to draw the demographical picture of the architectural design firms. The analysis was performed using Statistical Package for Social Science (SPSS). Both, demographical data and practice levels are analyzed. Besides my personal observation of the private Architectural Design Industry was used as an input.

The results of the assessment provide the necessary information for the architects to improve their PM practice. The study shows that the average project management Practice level for category one to category three private architectural design firms is two. Given that architectural design firms are project -based organizations, level two practice level, which is having planned level, is below

minimum expected. Indeed, given the sample frame (26) of the highest categories of private architectural design firms; a higher level of PM practice is to be expected. Besides Project Time Management was highly practiced among the other knowledge areas and it's followed by Project Quality Management. The least practiced knowledge area was the Project Risk Management. The assessment also showed that high correlation was found between ISO certified firms, number of staff and years of experience with over all PM practice. This study is the first attempt that focuses on private architectural design firms' PM practices in Ethiopia.

This piece of work cannot fully assess the overall project management practice level and related parameters in project execution. It will at least contribute and highlight certain pertinent factors that would enhance the level of project management practice.

Hope it gives an insight for future, that it might be used as a triggering document for other researcher who want to conduct detailed and further advanced research in the area of project management practice in the construction industry.

CHAPTER ONE INTRODUCTION

1.1 BACKGROUND OF THE RESEARCH

Projects, as a way to attain objectives, have been used since ancient times, generating important results to society and culture like the Great Wall of China, Ancient Roman roads, the first steam engine and many others. A project is a new, unique and temporary set of activities, with a defined beginning and end, which uses resources in a planned and organized way with the purpose of reaching certain objectives (Liviu, Emil and IOANA, 2010). A project is defined as a temporary endeavor undertaken to create a unique product or service, or result (PMI, 2013).

The characteristics of a project require a specific type of management. Project management is the application of knowledge skills, tools and techniques to project activities. Project management is accomplished through the application and integration of the project management processes of initiating, planning, executing, monitoring and controlling, and closing (PMI, 2013). Project management is recognized to be the key enabler of business change and a vital contributor to future business success (Whitty & Maylor, 2009).

Project management has evolved over time to a sophisticated and complex process, becoming the principal mean of dealing with change in modern organizations. As projects developed and knowledge was gained in this field, standards have occurred. Organizations and project management associations all over the world started to develop and follow these standards in order to optimize the project management activity.

One of the primary purposes of project management is to identify potential risks as much as possible and to plan, organize and control activities so that projects are completed successfully in spite of all the risks. This process should start well before any resource is committed, and must continue until all work is finished. The primary aim of the project manager is to satisfy the project sponsor or purchaser and all other principal stakeholders, within the promised timescale and without using more money and other resources than those that were originally set aside or budgeted.

Wideman (1999:2) defines practice as "a way of doing things". A best practice is defined as "a strategy, approach, method, tool or technique that is particularly effective in helping an organization achieves its objectives for managing a project" (Best practices in project management: Private and public sectors internationally, 2001:1).

(Douglas, 2009) argued that,

> "…as architects and designers, we are drawn to our professions with the lure of being part of a creative process and the opportunity to design great projects". We spend significant time and energy developing rigorous design processes to ensure unique and thoughtful projects. The management of these projects, however, is a secondary thought at best, often a necessary evil of securing the design work. As a result, many clients do not believe that working with design professionals is a positive experience, nor are they particularly satisfied with the delivery process, regardless of the outcome.
>
> Project management is perhaps the single most sought-after method in the design industry, even outpacing the search for design talent. The growing number of independent project management firms and the fact that 30 percent

> of projects today are design-build confirm that clients are demanding higher levels of leadership and accountability than ever before for the success of their projects. Yet Architectural design firms are falling short of clients' expectations in the delivery and management of those projects. While few in the design professions went to school with the intention of being project managers, they often seek that route as a fast track to becoming principal."

Project management should not be an alien subject but rather part of the design process, one that simply meets another dimension of the design. If one believes that design is problem-solving, then project management is merely resolving an additional component and should be approached with the same enthusiasm as the design process itself. Traditionally, project management is a very linear process, and as such, the enjoyment for both clients and staff responsible for management is diminished. Instead of being perceived as a continuing hassle, project management could be re-created as an experience so pleasurable to all stakeholders — clients, consultants, and staff — that they wouldn't consider working with anyone else.

William (2006) argued that for design firms to succeed in all fronts- financially, artistically, technically –effective project management is essential. Effective project management is the design firm's bread and butter.

1.2 BACKGROUND OF THE CASE FIRMS

Wouhib (2003) noted that it is not recorded when the first architectural practice was set-up in Ethiopia. Expatriate architects commissioned by either the government or prominent landlords may have prolonged their stay after their first commission expired. It was, however, a general trend for these expatriates to start full-fledged offices. Some of the best known of this era are: Bureau de etudes, Henri

Chommette, Studio Mezzedimi, Z. Enav & M. Tedros, Z. Kovacevic & I. Strauss, M. Kalos, Technoexporstory, Norconsult and Centro project.

These offices carried out the design and supervision of most of the prominent buildings in Addis Ababa. Other expatriates such as Alexander Doxiades and Aarno Ruusuvuori, did not establish local offices. The mentioned above offices were apparently staffed by expatriate Architects, since the first graduates of the school of Architects were not ready for employment before the late 60'.

The first Ethiopian partner in Architectural firm was Michael Tedros of Z. Enav & M. Tedros. Then in the early 70's National Consultants followed a year later by Getachew Bekele were established as the Ethiopian Consulting Firms."

The revolution of 1974 made dramatic changes in the rendering of design services. The established expatriate offices began to close shop one after the other, and offices with Ethiopian principals started to come on the scene. The government offices also absorbed majority of graduating architects. After establishment of the Ministry of Construction, now called Ministry of Construction, licensing of design offices began to take definite shape, Registration of professionals also followed suit.

As per the valid registration of consultants of 2009 E.C (2016/2017) data, there are 279 private and government consulting firms registered by Addis Ababa Construction Bureau in 6 different categories.

1.3 RATIONALE OF THE STUDY

The rationale of the study is to assess whether the Project Management practices are implemented effectively in Architectural Design Firms. Moreover the study is to suggest workable recommendations how effective project management practices such as Project Integration management, project scope management,

Project Time Management, Project Cost Management ,Project Quality Management , and, Project human resource Management, Project communication Management, Project risk Management , Project procurement Management and project stakeholder management can sustain the competitiveness of the firms and identifying the problems in order to overcome these problems and suggest in light of problems identified and propose areas for future research. Moreover, the researcher will observe how lack of effective project management practices consequently leads to project failure and makes practical recommendation for Architectural design firms to make improvement on the above issues and provide ideas for further research.

1.4 STATEMENT OF THE PROBLEM AND BASIC RESEARCH QUESTIONS

Architectural design offices perform majority of their activities in project environments. Each architectural design is a unique project. However, most of the firms are not prepared enough to handle their Project Management processes professionally. This might be because of the lack of awareness for PM concepts. Another reason could be inadequate training of architects in project management both at undergraduate level and after graduation. On the other hand, architectural design projects are becoming more complex and nowadays clients are increasingly demanding more professional approach on project management practice from architectural firms.

In Ethiopia, to counteract the low project management practice in private architectural design firms, clients start to adopt Design – Build delivery method for their complex projects. As this delivery method mostly controlled by contractors, it

creates further pressure on private architectural design firms. Therefore, the research mainly focused on the following questions:

- What is the overall status of PM practice in Private architectural design firms?
- What is the major difference in project management practice among various categories of Private architectural design firms?
- What is the ISO certification impact on PM Practice of Private architectural design firms?
- What is the year of experience impact on PM practice of Private architectural design firms?
- What is the staff number impact on PM practice of Private architectural design firms?

1.5 OBJECTIVE OF STUDY

1.5.1 General Objective

The general objective and central theme of this research focuses on assessing project management practice in private architectural design firms.

1.5.2 Specific Objectives

- To assess the overall status of PM practice in Private architectural design firms;
- To find out the level of PM practice under each project management knowledge area in various categories of Private architectural design firms.
- To examine ISO certification Impact on PM practice of Private architectural design firms.
- To examine year of experience impact on PM practice of Private architectural design firms.

- To examine staff number impact on PM practice of Private architectural design firms.
- To provide recommendation to improve project management practice in private Architectural design firms;

1.6 SCOPE OF THE STUDY

With regard to the scope of the study, even if both effective office management and project management are crucial for proper management of Architectural design firms, the study is made to focus on the effective project management practices during design development phase of the private Architectural design firms in Addis Ababa. However, the study excluded government and regional private Architectural design firms.

1.7 SIGNIFICANCE OF THE STUDY

The findings of this study will be considered important in providing insight into the various project management practices needed and give feedback and help Architectural design firms to apply the recommendations.

The study can encourage using a well-designed project management practices to achieve architectural design firm's objectives. It will be useful to firm's principals and project management practitioners to design the project management functions at firm's level in order to maximize performance towards achieving architectural firm's objectives.

This research paper can be useful for researchers who would like to know about project management function and practice issues for future research. Besides,

the study could serve as a reference to similar government and regional private firms who want to benefit from the study as a whole.

1.8 LIMITATION OF THE STUDY

The limitations associated with this research are listed below:

- Time is the first constraint researcher encountered versus the complexity of the study undertaken;
- The research is focused only on design stage works of the private Architectural design firms in Addis Ababa; and
- A lot depended on how the selected private Architectural design firm's CEOs, partners or senior architects or project manager reacted to the study and appreciate the work undertaken. It was limited by response which was given and efforts made to assist the researcher to complete the work in the given time effectively and efficiently.

1.9 DIRECTION FOR FURTHER RESEARCH

Undertaking this research has opened many venues for further research initiatives which are presented below:

- Researchers can also investigate the project management practices in government and private regional Architectural design firms to have an overall picture of the project management practices in Architectural design industry in the country.
- Researchers can also research on short term and long term strategies for the private Architectural design firms to reach the higher practice level in project management.

1.10 ORGANIZATION OF THE STUDY

The research is arranged in five chapters. Chapter one deals with the introductory part of the study and covered such topics like Background of the study, statement of the problem, General and Specific Objectives of the study, significance of the study and scope and limitations of the study.

Chapter Two Covered Literature Review to give theoretical basis to the study. Chapter Three is about Research Design and Methodology that is going to be employed. Chapter Four is all about Data Analysis and discussion of Findings and finally, Chapter five gives major findings, conclusions and recommendations with the objective of rectifying the identified problems.

CHAPTER TWO: LITERATURE REVIEW

2.1 UNDERSTANDING PROJECT

2.1.1 WHAT IS PROJECT?

The term project is described in different ways in the research literature. This is illustrated below:

- A project is a temporary endeavor undertaken to create a unique product, service, or result. The temporary nature of projects indicates that a project has a definite beginning and end. (PMI, 2013, p.2)
- Project has been termed as a human endeavor and may legitimately be regarded by its stakeholders as a project when it encompasses a unique scope of work that is constrained by cost and time, the purpose of which is to create or modify a product or service so as to achieve beneficial change defined by quantitative and qualitative objectives (Cooke-Davies, 2001, p.20).
- Project is described as a "value creation undertaking based on specifics, which is completed in a given or agreed timeframe and under constraints, including resources and external circumstances" (Ohara, 2005, p.15)
- A project is a regarded as a business case that indicates the benefits and risks of the venture, demonstrating a unique set of deliverables, with a finite life-span, by using identified resources with identified responsibilities (Bradley, 2002).

The common themes in these definitions is that projects are unique in their output, having a definite starting and ending point, are temporary in nature and are carried out to manifest the organization's strategic objectives. These temporary

structures are playing a vital role in today's modern organizations and a growing interest is recorded in the significance of these temporary structures in organizations.

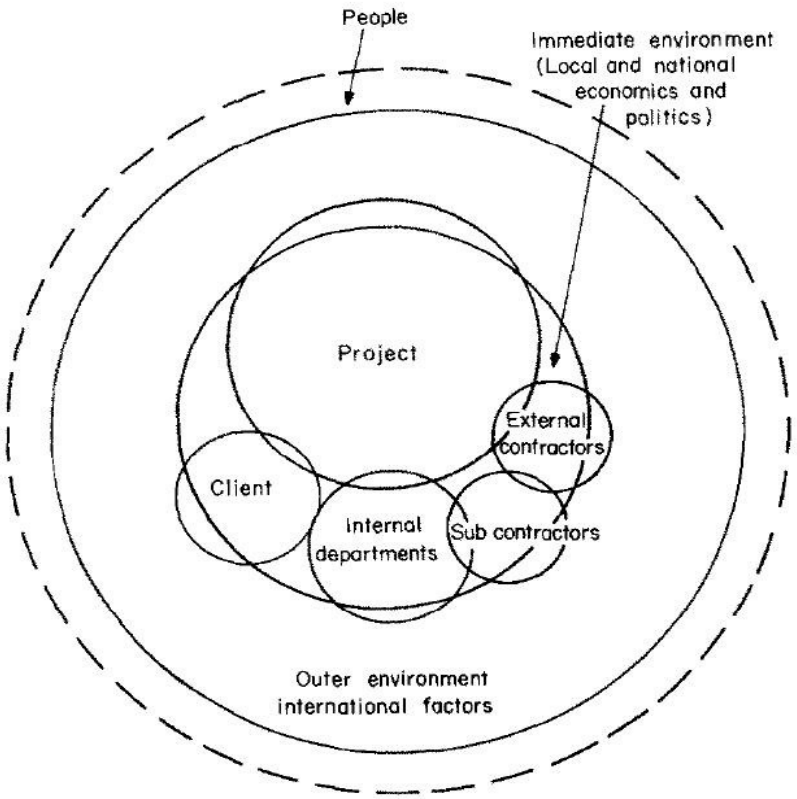
2.1.2 NATURE OF PROJECTS AND THE PROJECT ENVIRONMENT IN DEVELOPING COUNTRIES

The nature of projects and the environment in which they are implemented in developing countries is different from that of the developed countries where Project Management is originated and developed [(Cusworth & Franks, 1993), (Voropajev, 1998), (Jekale, 2004)]. Most Projects in both developed and developing countries are complex and operate in a dynamic environment. However, projects in developing countries are highly uncertain, and operate in a highly unstable, unpredictable and poorly resourced environment. This poses a challenge on project manager in developing countries which is not seen by their counter parts in the developed nations [(Cusworth & Franks, 1993), (Jekale, 2004)]. According to (Voropajev, 1998) Project management functions(processes) that are sensitive to changes such as management of risk, procurement, contracts, scope, configuration, communications, and information are more important in managing projects in developing countries than in developed countries context. The Project management functions less exposed to change such as management of quality, time, cost, human resources become more important in the developed economies than developing countries context. Further, according to [(Muriithi & Crawford, 2003), (Cusworth & Franks, 1993)] management of externality of projects and the political and risk management skill become very important in the context of the developing countries.

Project environment is fundamental to the project success (PMI, 2004). Virtually all projects are planned and implemented in a certain social, economic and environmental context. These contextual variations can affect the project positively

and negatively. Gilbert (1983) depicts the project and its environment as a series of overlapping circles all of which are largely, but not entirely, contained in the immediate environment, signifying the local community, national government and its agencies. This is illustrated in the Figure 2 below:

Figure 2.1 The project and its environment



(Source: Glbert, 1983)

The outer solid –line circle represents the international economic and political environment within which the project exists. This circle is surrounded by the dotted line; labeled as 'people'. This dotted line is a reminder that people are everywhere – within the project and in its environment. Therefore, a special consideration is required from the project team to understand the cultural, social, environmental and political environment of the project (PMI, 2004).

2.2 PROJECT MANAGEMENT (PM)

2.2.1 WHAT IS PROJECT MANAGEMENT?

Project management is defined in different ways in the research literature. Some of these definitions are as follows:

- Project Management is described as a collection of tools and techniques to direct the use of diverse resource toward the accomplishment of a unique, complex, one-time task within time, cost and quality constraint. Each task requires a particular mix of these tools and techniques structured to fit the task environment and life cycle (from conception to completion) of the task (Oisen, 1971: Cited in Atkinson, 1999).
- Project Management is express as planning, organizing, monitoring and controlling of all the aspects of a project and the motivation of all the involved stakeholders to achieve the project objectives safely and within agreed time, cost and performance criteria. (APM, 1995).
- Project management is term as an application of knowledge, skills, tools and techniques to project activities to meet project requirements. Project Management is accomplished through the application and integration of the project management processes of initiation, planning, executing, monitoring and controlling and closing. (PMI, 2004).

In its early days the project management was solely concerned with the implementation of single project in that era (Kartam et al. 2000). But, today many organizations have embraced the concept of project management. This is mainly because of its systematic approach of managing the projects (Morgan, 1987). It's a way to generate consistent results when undertaking new initiatives and a powerful business tool that can transform an organization's ability to perform well (Artto et. al,

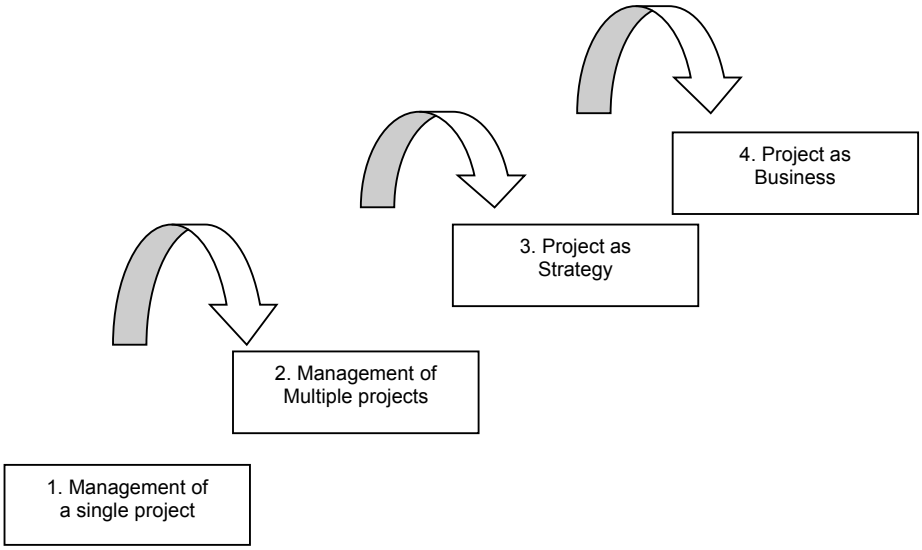
2008). Project management can also be used throughout the organization to boost personal and collaborative productivity. This can be done by building a standardized system that embeds best practices into the way projects are managed (Milosevic and Patanakul, 2005).

2.2.2 EVOLUTION OF PROJECT MANAGEMENT

The industrial revolution marked the beginning of what is referred to today as the modern organization in early 50s. This is the era in which the economic activity was in full swing in many western countries, with engineering and construction project making a major impact on the environment. This rapid growth demanded a tool and technique which is capable of organizing and managing projects at various locations (Abbasi and Al-Mharmah, 2000). During this era, network analysis and planning techniques, like Program Evaluation and Review Technique (PERT) and Critical Path Method (CPM) formed the focus of development in project management. In 1960s, these techniques continued to be popular in the construction industry (Crawford et al 2005). Development in the field of project management in the 1960s also included the formation of two major professional associations. Shenhar (1996) cited in Crawford et al (2006) noted that the focus on teamwork was the defining feature of project management in 1970s. While Stretton (1994) cited in Crawford et al (2006) notes 70's era as an emphasis on work breakdown structures and systems concepts. The 1980s were typified by a focus on project organization, project risk and the external influences (Crawford et al. 2006). This era also led to the development of the international standards for project management. Although project management grows in term of a profession until 1980 but still it was perceived as the sole domain of engineers, finding a niche specifically in the civil engineering industry (Van Der Merwe, 2002).

Similarly, other prominent researcher (Kwak and Anbari, 2009; Soderlund, 2004a; Cicmil et al, 2006; Artto et al, 2008; Artto and Kujala, 2008) have discussed the evolution of project management from managing a single project to multiple projects and then towards project as strategy and business. The Figure 2.2 below may illustrate this evolution.

Figure 2.2: Evolution of Project Management



(Source: Ali, 2010)

2.2.3 FIVE PHASES AND SIX ACTIVITIES OF PROJECT MANAGEMENT

William (2006) also explained that different fundamental project management activities are necessary during the different phases of the design project so that the work is accomplished in a logical order and for project success. The six fundamental project management activities are:

1. ***Defining*** the design project's scope of work, budget, and schedule-in effect, determining the project objectives.
2. ***Planning*** the work effort so that the project scope of work, budget, and schedule will be met.

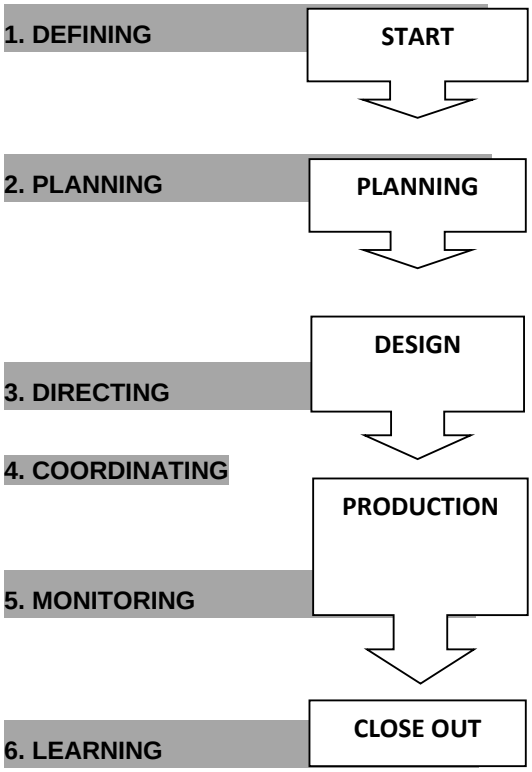
3. ***Directing*** the design team as it does the work so the project objectives will be met while staying within budget and on schedule.

4. ***Coordinating*** the efforts of the design team so that interdisciplinary information flows smoothly and at the right time.

5. ***Monitoring*** the design team's work product and progress against the project objectives, budget, and schedule.

6. ***Learning from the project***-what went right, what went wrong, and how to improve performance on the next project.

Figure 2.3: The Six Activities of Project Management and their Relationship to the Five Phases of a Project



(Source: William, 2006)

2.3 GLOBALLY ACCEPTED STANDARD OF PROJECT MANAGEMENT

The development of standards in project management began with recognition of shared interests, resulting in fairly informal community gatherings. Through regular meetings and recognition of shared experience, practitioners began to think of themselves as a community and a profession. This led to attempts to define and delineate that profession in order to make it visible and acceptable to those outside the community (Crawford 2004). Over the last decade different standards or BOKs has been introduced in the profession of project management. Duncan (1998) classifies these standards into three categories of project related, organization related and people related. The project related standard are focused on the knowledge and practices of management of projects with the view point of an individual project. The organization related projects are focused on the knowledge and practices of management of projects with the view point of an enterprise. And, the people related standards are focused on the development, assessment and certification of people. The table below will illustrate this classification.

Table 2.1: Different Project Management Standards focusing on people, projects and organizations

People	Projects	Organizations
Engineering Construction Training Board	A Guide to Project Management Body of Knowledge (PMBOK Guide)	Guide book for project & Program management for enterprise innovation (P2M)
South African Qualifications Authority (SAQA)	International Project Management Association Competence Baseline (ICB)	Organization Project Management Maturity Model (OPM3)

National Competency Standards for Project Management (NCSPM)	The Association for Project Management Body of Knowledge (APMBOK)	Office of Government Commerce Managing Successful Programmes (OGC SMP)
	British Standards (BS 6079)	Office of Government Commerce Project Management Maturity Model (OGC PMMM)
	International Standards Organization (ISO 10006)	Project in controlled environments (PRINCE 2)

(Source: Crawford et al. 2008)

2.4 PROJECT MANAGEMENT INSTITUTE BOOK OF KNOWELEDGES

The Project Management Institute (PMI) has developed arguably the most significant Project Management standard, PMBOK Guide (PMI, 2004), currently in its fifth edition. The PMBOK Guide is approved as an American National Standard by American National Standard Institute (ANSI) and is recognized by the Institute of Electrical and Electronics Engineers (IEEE) as an IEEE standard (IEEE, 2009).

The PMI (2004) describes that much of the knowledge of tools and techniques for managing projects are unique to project management. However, understanding and applying the knowledge, skills, tools and techniques which are recognized as best practices are not sufficient alone for effective project management. PMI emphasizes that in addition to the knowledge of tools and techniques, there are various other areas that are also vital in the application of project management.

These are:

- Application Area Knowledge, standards and regulations;

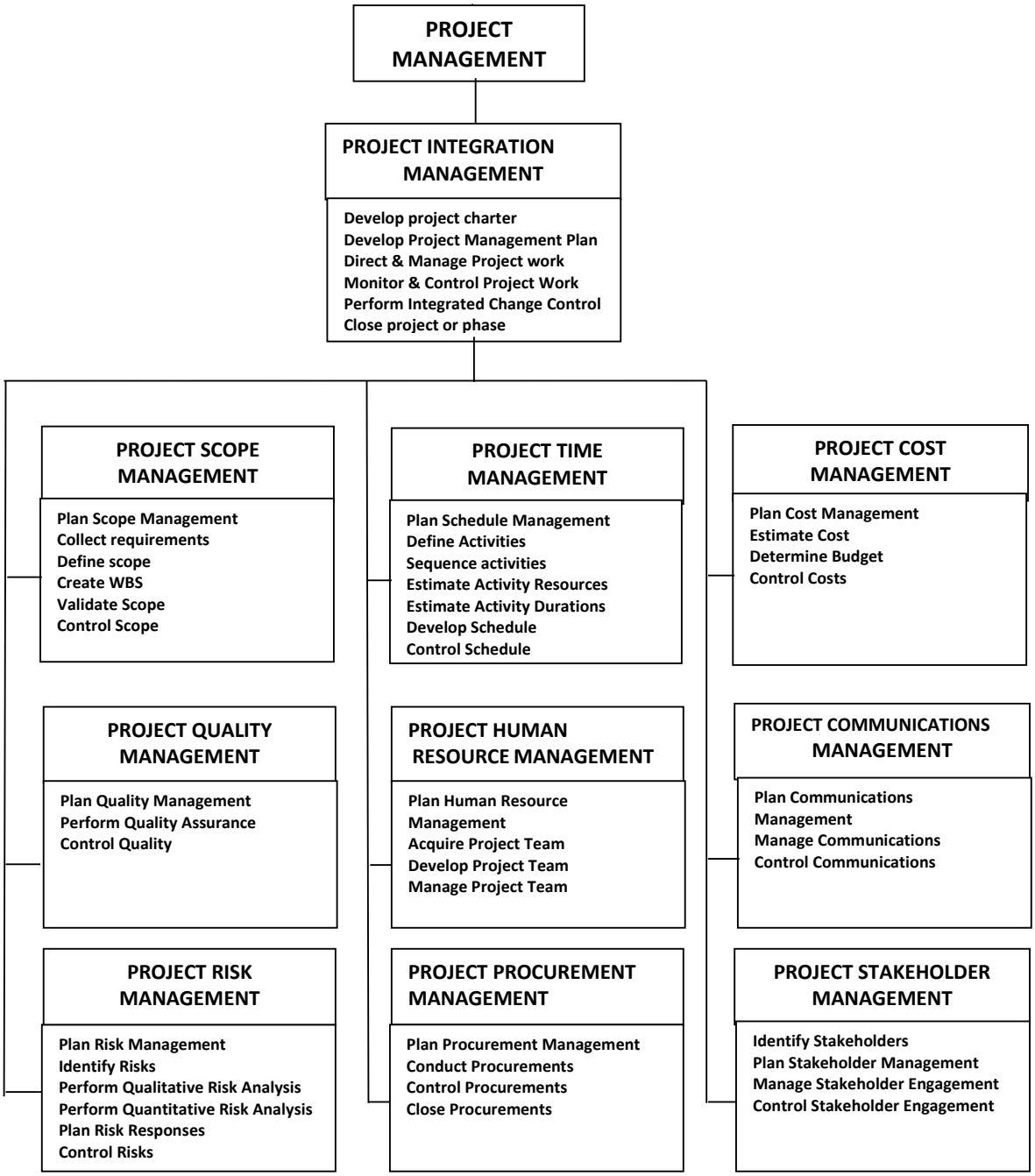
- Understanding the project environment;
- General management knowledge and skills; and
- Interpersonal skills.

The PMBOK guide divides the project into the five phases and describes it as a project management process groups. It also advocates that for the project to be successful the project team must select the appropriate processes within the process group to meet the project objectives. These process groups are defined as:

- Initiating Process Group
- Planning Process Group
- Executing Process Group
- Monitoring and Controlling Process Group
- Closing Process Group

Apart from these five process groups the Guide also divides the project management into ten knowledge areas. Figure 2.4 below depicts the knowledge areas together with processes.

Figure 2.4: Project Management Knowledge Areas



(Source: Develop from PMI, 2013)

The guide also provides a matrix that maps project management process onto five project management process groups. The Table 2.2 below depicts project management process groups and knowledge areas mapping:

Table 2.2: Project Management Process Groups and Knowledge Areas mapping

Knowledge Areas	**Project Management Process Groups**				
	Initiating Process Group	**Planning Process Group**	**Executing Process Group**	**Monitoring and Controlling**	**Closing Process**
4. Project Integration Management	4.1 Develop Project Charter	4.2 Develop Project Management Plan	4.3 Direct and Manage Project Work	4.4Monitor and Control Project Work 4.5Perform Integrated Change Control	4.6 Close Project or Phase
5. Project Scope Management		5.1Plan Scope Management 5.2Collect Requirements 5.3Define Scope 5.4Create WBS		5.5Validate Scope 5.6Control Scope	
6. Project Time Management		6.1Plan Schedule Management 6.2Define Activities 6.3Sequence Activities 6.4Estimate Activity Resources 6.5Estimate Activity Durations 6.6Develop Schedule		6.7 Control Schedule	
7. Project Cost Management		7.1Plan Cost Management 7.2Estimate Costs 7.3Determine Budget		7.4 Control Costs	
8. Project Quality Management		8.1 Plan Quality Management	8.2 Perform Quality Assurance	8.3 Control Quality	

9. Project Human Resource Management		9.1 Plan Human Resource Management	9.2Acquire Project Team 9.3Develop Project Team		
10. Project Communicati		10.1 Plan Communications	10.2 Manage Communication	10.3 Control Communications	
11. Project Risk Management		11.1Plan Risk Management 11.2Identify Risks 11.3Perform Qualitative Risk Analysis 11.4Perform Quantitative Risk Analysis 11.5Plan Risk		11.6 Control Risks	
12. Project Procurement Management		12.1 Plan Procurement Management	12.2 Conduct Procurements	12.3 Control Procurements	12.4 Close Procurements
13. Project Stakeholder Management	13.1 Identify Stakeholders	13.2 Plan Stakeholder Management	13.3 Manage Stakeholder Engagement	13.4 Control Stakeholder Engagement	

(Source: PMI, 2013)

The PMBOK has become a de facto international standard for project management knowledge (Crawford and Pollack, 2008). However, it is also acknowledged that it has been developed predominantly for a North American audience (Murithi and Crawford, 2003).

2.5 GENERALLY ACCEPTED PROJECT MANAGEMENT PRACTICES

According to PMI (2013) the Project Management Body of Knowledge (PMBOK) is "an inclusive term that describes the collective (accumulated) knowledge within the profession of project management". The full PMBOK includes knowledge of proven traditional practices that are widely applied, as well as knowledge of innovative and advanced practices which have seen more limited use. The primary purpose of the PMBOK is to identify and describe the project management practices that are generally accepted. Generally accepted means that the knowledge and practices described are - 47 - applicable to most projects most of the time and that there is widespread consensus about their value and usefulness. The ten knowledge areas covered by the PMBOK will be discussed in more detail below:

2.5.1PROJECT INTEGRATION MANAGEMENT

PMI (2013) defines Project Integration Management as "the processes and activities to identify, define, combine, unify, and coordinate the various processes and project management activities within the Project Management Process Groups". In the project management context, integration includes characteristics of unification, consolidation, communication, and integrative actions that are crucial to controlled project execution through completion, successfully managing stakeholder expectations, and meeting requirements. Project Integration Management includes making choices about resource allocation, making trade-offs among competing objectives and alternatives, and managing the interdependencies among the project management Knowledge Areas. The project management processes are usually presented as discrete processes with defined interfaces while, in practice, they

overlap and interact in ways that cannot be completely detailed in the PMBOK® Guide.

The major project scope management processes are: Develop Project Charter, Develop Project Management Plan, Direct and Manage Project Work, Monitor and Control Project Work, Perform Integrated Change control and Close Project or Phase.

2.5.2PROJECT SCOPE MANAGEMENT

PMI (2013) defines Project Scope Management as “the processes required to ensure that the project includes all the work required, and only the work required, to complete the project successfully”. Managing the project scope is primarily concerned with defining and controlling what is and is not included in the project.

The major project scope management processes are: Plan Scope Management, Collect requirements, Define Scope, Create WBS, Validate Scope, and Control Scope.

2.5.3PROJECT TIME MANAGEMENT

PMI (2013) defines Project Time Management as “the processes required to manage the timely completion of the project”.

The Major project time management Processes are: Plan schedule Management, Define Activities, Sequence Activities, Estimate Activity Resources, Estimate Activity Duration, Develop Schedule and Control Schedule.

2.5.4PROJECT COST MANAGEMENT

PMI (2013) defines Project Cost Management as “the processes involved in planning, estimating, budgeting, financing, funding, managing, and controlling costs so that the project can be completed within the approved budget”.

The Major Project Cost Management Processes are: Plan Cost Management, Estimate Costs, Determine Budget and Control Costs.

2.5.5PROJECT QUALITY MANAGEMENT

PMI (2013) defines Project Quality Management as the processes and activities of the performing organization that determine quality policies, objectives, and responsibilities so that the project will satisfy the needs for which it was undertaken. Project Quality Management uses policies and procedures to implement, within the project's context, the organization's quality management system and, as appropriate, it supports continuous process improvement activities as undertaken on behalf of the performing organization. Project Quality Management works to ensure that the project requirements, including product requirements, are met and validated.

The Major Project Quality Management Processes are: Plan Quality Management, Perform Quality Assurance and Control Quality

2.5.6PROJECT HUMAN RESOURCE MANAGEMENT

PMI (2013) defines Project Human Resource Management as "the processes that organize, manage, and lead the project team". The project team is comprised of the people with assigned roles and responsibilities for completing the project. Project team members may have varied skill sets, may be assigned full or part-time, and may be added or removed from the team as the project progresses. Project team members may also be referred to as the project's staff. Although specific roles and responsibilities for the project team members are assigned, the involvement of all team members in project planning and decision making is beneficial. Participation of team members during planning adds their expertise to the process and strengthens their commitment to the project.

The Major Project Human Resource Management Processes are: Plan Human Resource Management, Acquire Project Team, Develop Project Team and Manage Project Team.

2.5.7PROJECT COMMUNICATIONS MANAGEMENT

PMI (2013) defines Project Communications Management as “the processes that are required to ensure timely and appropriate planning, collection, creation, distribution, storage, retrieval, management, control, monitoring, and the ultimate disposition of project information”. Project managers spend most of their time communicating with team members and other project stakeholders, whether they are internal (at all organizational levels) or external to the organization. Effective communication creates a bridge between diverse stakeholders who may have different cultural and organizational backgrounds, different levels of expertise, and different perspectives and interests, which impact or have an influence upon the project execution or outcome.

The Major Project Communications Management Processes are: Plan Communications Management, Manage Communications, and Control Communications.

2.5.8PROJECT RISK MANAGEMENT

PMI (2013) defines Project Risk Management as “the processes of conducting risk management planning, identification, analysis, response planning, and controlling risk on a project”. The objectives of project risk management are to increase the likelihood and impact of positive events, and decrease the likelihood and impact of negative events in the project.

The Major Project Risk Management Processes are: Plan Risk Management, Identify Risks Perform Qualitative Risk Analysis, Perform Quantitative Risk Analysis, Plan Risks Responses and Control Risks.

2.5.9PROJECT PROCUREMENT MANAGEMENT

PMI (2013) defines Project Procurement Management as "the processes necessary to purchase or acquire products, services, or results needed from outside the project team". The organization can be either the buyer or seller of the products, services, or results of a project.

Project Procurement Management includes the contract management and change control processes required to develop and administer contracts or purchase orders issued by authorized project team members.

Project Procurement Management also includes controlling any contract issued by an outside organization (the buyer) that is acquiring deliverables from the project from the performing organization (the seller), and administering contractual obligations placed on the project team by the contract.

The Major Project Procurement Management Processes are: Plan Procurement Management, Conduct Procurements, Control Procurement and Close Procurement.

2.5.10 PROJECT STAKEHOLDERS MANAGEMENT

PMI (2013) defines Project Stakeholder Management as "the processes required to identify the people, groups, or organizations that could impact or be impacted by the project, to analyze stakeholder expectations and their impact on the project, and to develop appropriate management strategies for effectively engaging stakeholders in project decisions and execution". Stakeholder management also focuses on continuous communication with stakeholders to understand their needs

and expectations, addressing issues as they occur, managing conflicting interests and fostering appropriate stakeholder engagement in project decisions and activities. Stakeholder satisfaction should be managed as a key project objective.

The Major Project Stakeholder Management Processes are: Identify Stakeholders, Plan Stakeholder Management, Manage Stakeholder Engagement and Control Stakeholder Engagement.

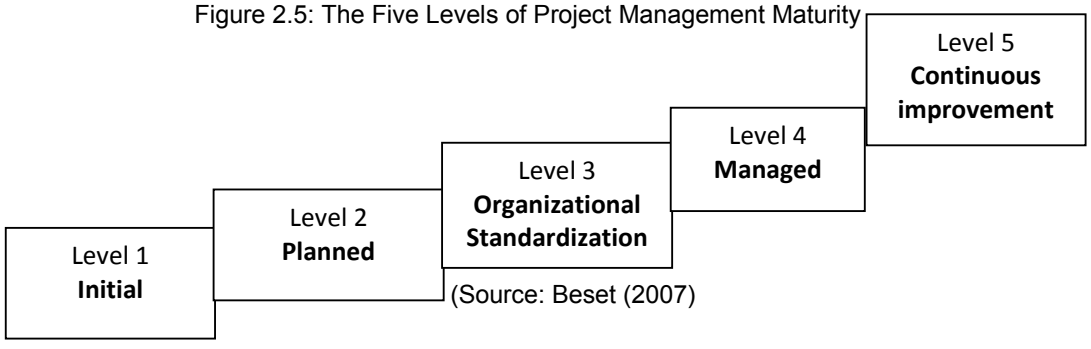
2.6 PROJECT MANAGEMENT PRACTICE LEVELS FOR ARCHITECTURAL DESIGN FIRMS

Beset (2007) explained that all previous practice models were useful, however they all needed to be developed to be utilized for architectural design offices, because of their concerned areas, different practices and processes, different cultures and organizational structures, differences in their production processes and the product itself, etc.

Beset (2007) also iterated that …the following Practice Levels of Architectural Project Management are developed for architectural design offices by analyzing and evaluating the previous practice models such as (SEI 1993), (Kwak 1997), (Kwak and Ibbs 2002) and (Crawford 2006).

Model uses 5-leveled maturity scale for architectural design offices as shown in a figure -2.5 below:

Figure 2.5: The Five Levels of Project Management Maturity



(Source: Beset (2007)

This thesis also considers the five leveled maturity scale in analyzing the project management practice level in Private Architectural Design Firms. The five level of Project Management Practice levels will be discussed in more detail below:

2.6.1 LEVEL 1: INITIAL

Although there is awareness about project management, there are no formal practices or standards for it. Documentation is very weak. Architects are of a need for project management for the architectural design process. All the activities during the process are ad-hoc.

- Ad-hoc designs, solutions and processes.
- Architects heard about project management.

2.6.2 LEVEL 2: PLANNED

During design processes, many different project management processes are applied but there is no standardization. Documentation is basic but the links are not formed between the documentation activities. Office Management supports the project management but the architects are suffering to apply these to all design processes. There is no systematic application of the management activities.

Success is dependent to the architect's experience. Thus, an architectural design office having more design processes is like to be better in applying management activities. Project management is project oriented. Every different design process is handled independently. When the scale of the project gets larger, the managers give higher importance to the project management activities.

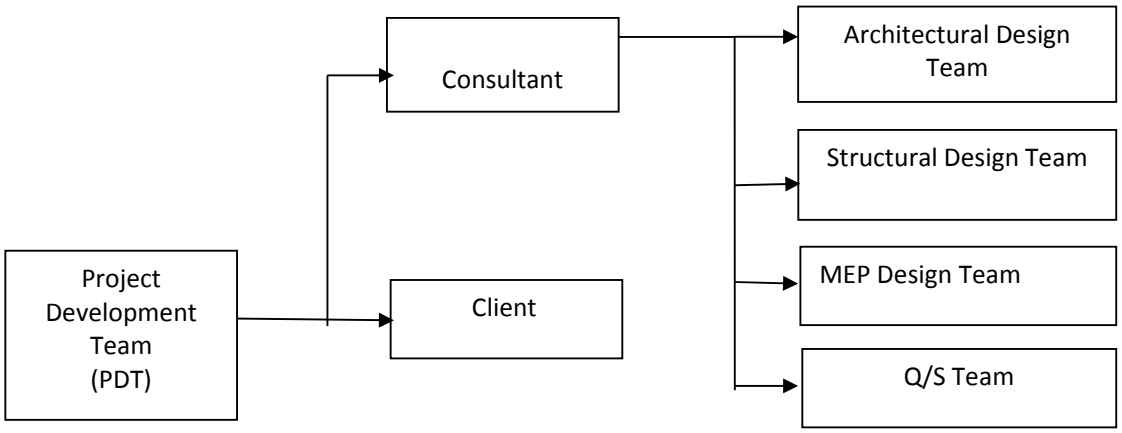
- Project management is supported by the office managers.
- There is no systematic process.
- Success of the project management depends on the architects' experience.

- Project management is project oriented. Every process is independently handled.
- Managers pay more attention to higher scale projects.

2.6.3 LEVEL 3: ORGANIZATIONAL STANDARDIZATION

All the project management processes are in place and established as architectural design office's own organizational standards. All the other stakeholders of the process like client, other engineering design offices, and the architects act as one project team. Architectural design office establishes its own processes and standards with formal documentations. Office managers are involved in the key decisions and they are also involved in the approval of key documents and other project issues. All the processes of the design in the architectural design office are automated. Each project is evaluated and managed in light of other projects. At this level, architectural design office cannot blindly apply all processes equally to all projects. The processes should be modified according to the ongoing project.

Figure 2.6: Project Development Team (PDT)



(Source: Redeveloped from Khalfan 2000)

2.6.4 LEVEL 4: MANAGED

Projects are managed in the light of future plans of the architectural design office. While doing this, the consideration of the previous processes is not neglected.

Office managers use efficiency and effectiveness metrics to make decisions regarding the current project and realize the impacts on other projects. All projects, changes and other issues are evaluated based upon metrics from cost estimates, baseline estimates and earned value estimations.

Project Development Team (PDT) continues in this level more efficiently. All project information is distributed and integrated to all members of the project development team. All the processes and standards are documented for the decision of the project processes. These documents support the usage of metrics. Office managers purely and brilliantly understand their roles in the process and execute it very clearly and effectively.

- Projects are managed in the light of future plans.
- Office managers use the metrics for the project decisions.
- PDT work very efficiently. Standardization integrates to all PDT members.
- Office managers brilliantly understand their roles.

2.6.5 LEVEL 5: CONTINUOUS IMPROVEMENT

Processes are actively used by the office managers for the improvement of the project management activities. Lessons learned are used for improving the project management processes, standards and documentations. All the staff of the architectural design office not only focuses on the current project activities but also focuses on the continuous improvement. All the collected metrics during the execution of the project processes are also used for the future decisions.

- Processes used for the improvement of the project management activities.
- All the staff of the architectural design office focuses on the improvement.
- All collected metrics used for future decision

CHAPTER THREE: RESEARCH DESIGN AND METHODOLOGY

This chapter presents the research methodologies and techniques that were employed in gathering data for the study.

3.1 RESEARCH DESIGN

Since the study focused on present situations, the research study used the descriptive research methodology. It involved the recording, description, analysis and interpretation of the present project management practices of architectural firms. Under the descriptive research method, the technique that was utilized is the case study method. The results and findings of the study were compared with universally accepted project management practices.

According to Glass & Hopkins, 1984, descriptive research can be either quantitative or qualitative. It can also involve collections of quantitative information that can be tabulated along a continuum in numerical form. Descriptive type of research does not fit neatly into the definition of either quantitative or qualitative research methodologies, but instead it can utilize elements of both, often within the same study.

3.2 DATA SOURCE

This researcher used both primary and secondary sources in order to generate relevant valid information to the survey.

Primary data was gathered from CEO, principals, Senior Architects and Project Managers who are involved in project management activities. The research believes that these professionals have exposure in the issue under study.

The primary date is collected from selected firms through the distribution of self-administered structured questionnaire.

Secondary data was collected from relevant sources which include the architectural firm's design projects reports. Besides relevant books, previous studies and project management guidelines, internet search from reliable sources, journals and similar periodicals were also being consulted for this purpose.

3.3 SELECTION OF TARGETED FIRMS

The targeted Architectural Design firms were selected by convenience sampling method.

3.4 SAMPLE & SAMPLING TECHNIQUES

The sample frame for the case study was established from list of consultants which are operating in Ethiopia from the valid registration of 2009 E.C (2016/2017).

The total number of consultants with valid registration for 2009 E.C (2016/2017) is estimated to be 279. The corresponding minimum sample size for the population was chosen by stratifying. The first strata that have higher project handling capacity were taken for analysis; the populations for each strata were classified here under. Thus Category I has a total population of 70, (20% of the population), 14 firms were chosen for the survey, similarly from category II, 100% of the population or 4 firms. Finally, from category III, 14% of the population or 12 firms were taken for analysis.

Table 3.1: Consultants registered in year 2009 E.C (2016/2017) stratified in their respective category.

Strata	CAE (N)	Sample Size
1	70	14
2	4	4
3	85	12
4	9	-
5	106	-
6	6	-
Total	279	30

(Source: Addis Ababa City Construction Bureau report)

3.5 DATA COLLECTION INSTRUMENT

The researcher used primary and secondary data for analysis. Data were collected from selected private Architectural design firms in Addis Ababa.

Here are the three ways used in collecting primary data for this study:

- Through Questionnaires; Collecting primary data through questionnaires by sending questionnaires to firm's CEO, principals, Senior Architects and Project Managers
- Observation; as practicing project manager, the researcher included his own personal observation.

Secondary data source included a review of literature on major project management text books, architectural firms project files, and peer reviewed journal

articles, annual reports and other research materials available in architectural design firms with other relevant documentation and publications.

3.6 METHOD OF DATA ANALYSIS

For this study a qualitative and quantitative methods were used to analyze the findings to reach at the result. For better understanding of the cases under discussion, statistical package for social sciences, version 20(SPSS-20), graphs and diagrams were used for presentation and analysis.

CHAPTER FOUR: PRESENTATION AND ANALYSIS OF DATA

This Chapter of the study deals with presentation, analysis, and interpretation of the data gathered through primary data (Questionnaire) and secondary sources of the data from published and unpublished sources to assess the PM practice level of the private Architectural Design Firms.

To gather the primary raw data, a survey was made through a questionnaire, once the questionnaires were collected, and analysis was performed using a statistical package for social sciences, version 20(SPSS-20). The survey was made on CEO, principals, Senior Architects and Project Managers of the private Architectural Design firms.

The researcher used descriptive type of research and stratified random sampling to get reliable information of the current status of the issue understudy. Hence the entire populations of the private Architectural Design firms in Addis Ababa were not surveyed.

The research was conducted only on Category I, II and III of private Architectural Design firms in Addis Ababa, in order to get correct and relevant information. In light of this, questionnaires were distributed to 30 selected respondents, and out of these, 26 filled and submitted back properly.

4.1 Demographic Characteristics of the respondents

Table 4.1 Sex of the respondents with their category

Sex of Respondents		Categories of the Architectural Design Firms			
		CAT- I	CAT-II	CAT- III	Total
Female	Frequency	1	0	1	2
	Percent	7.7%	0.0%	9.1%	7.7%
Male	Frequency	12	2	10	24
	Percent	92.3%	100.0%	90.1%	92.3%
Total	Frequency	13	2	11	26
	Percent	100.0%	100.0%	100.0%	100.0%

Source: Own Survey, February 2018

Table 4.1 above shows sex of respondent with their category, out of the total respondents 24(92.3%) were male and 2(7.7%) were female. The details also show that in CAT –I, 92.3%, in CAT-II, 100% and CAT-III 90.9% are male. This clearly shows that the private Architectural design industry is well dominated by male. These respondents are CEOs, principals, Senior Architects and Project Managers of private Architectural Design Firms who are directly engaged in project execution and who have minimum knowledge and background information in project execution.

Table 4.2 Educational Qualification of Respondents with their category

Educational qualification		Categories of the Architectural Design Firms			
		CAT- I	CAT-II	CAT- III	Total
PhD	Frequency	0	0	1	1
	Percent	0.0%	0.0%	9.1%	3.9 %
Master's Degree	Frequency	5	1	1	7
	Percent	38.5%	50.0%	9.1%	26.9%
Bachelor Degree	Frequency	8	1	9	18
	Percent	61.5%	50.0%	81.8%	69.2%
Total	Frequency	13	2	11	26
	Percent	100.0%	100.0%	100.0%	100.0%

Source: Own Survey, February 2018

As can be seen from the above Table 4.2 (a), the respondents were from different level of educations. Out of the total respondents, 1(3.9%) has a PHD, 7(26.9%) have Master's degree and 18(69.2%) have a Bachelor degree. Overall, out of 26 total respondents 8 (30.5%) have minimum of Master's degree level.

Table 4.3 Project Management related training status of respondents with their category

Project Management related training status		Categories of the Architectural Design Firms			
		CAT- I	CAT-II	CAT- III	Total
Yes	Frequency	4	2	8	14
	Percent	30.8%	100.0%	72.7%	53.8%
No	Frequency	9	0	3	12
	Percent	69.2%	0.0%	27.3%	46.2%
Total	Frequency	13	2	11	26
	Percent	100.0%	100.0%	100.0%	100.0%

Source: Own Survey, February 2018

As can be seen from the above Table 4.3, the respondents have different level of Project Management training. Out of the total respondents, 14(53.8%) had a Project Management training in one way or another and 12(46.2%) did not take any training in project management. This study clearly showed that 46.2% did not take any training project management. My personal experience in the industry affirmed that even those who took courses in PM did not have deep knowledge of PM and the rest of practitioner did not take any training in PM at all even though the professionals are engaged on daily basis in project execution activities.

Table 4.4 Business Organization type of respondent firms with their category

Business Organization form		Categories of the Architectural Design Firms			
		CAT- I	CAT-II	CAT- III	Total
Local private limited company	Frequency	11	1	5	17
	Percent	86.6%	50.0%	45.5%	65.4%
Sole Proprietary	Frequency	2	1	6	9
	Percent	15.4%	50.0%	54.5%	34.6%
Total	Frequency	13	2	11	26
	Percent	100.0%	100.0%	100.0%	100.0%

Source: Own Survey, February 2018

As can be seen from the above Table 4.4, the Architectural Design Firms are organized in different forms. Out of the total respondents, 17 (34.6%) have organized their business as private limited company and 9 (46.2%) are organized as sole proprietorship. This study clearly shows that even those firms which are organized as private limited company are family owned companies and my personal experience also confirmed that most of the firms does not have senior and junior partners like foreign Architectural design firms. Whenever owner Architect passed away, the probability of business closure is eminent.

Table 4.5 Consultancy Firm by Licensing Type of respondents with their category

Consulting Firm by Licensing Type		Categories of the Architectural Design Firms			
		CAT- I	CAT-II	CAT- III	Total
Consulting Architects (CA)	Frequency	2	0	1	3
	Percent	15.4%	0.0%	9.1%	11.5%
Consulting Architects & Engineers (CAE)	Frequency	11	2	10	23
	Percent	84.6%	100.0%	90.9%	88.5%
Total	Frequency	13	2	11	26
	Percent	100.0%	100.0%	100.0%	100.0%

Source: Own Survey, February 2018

As can be seen from the above Table 4.5, the respondents have service licenses in different forms. Out of the total respondents, 3 (11.5%) have a license of Consulting Architects (CA) and 23 (88.5%) have a license of Consulting Architects and Engineers (CAE). This study demonstrated that majority of the consulting firms have a license of consulting Architects and Engineers. My personal experience also is against the licensing of Architects firms to provide service of Engineering because the engineering services knowledge of the Architect is limited. As most of the consulting Architect firms do in the rest of the world, the Engineering services should be subcontracted to specialized Engineering service consultants and the architect should manage a necessary coordinating role.

Table 4.6 Service Provision of Architectural Firms of respondents with their category

Licensing type of Architectural Design Firms		Categories of the Architectural Design Firms			
		CAT- I	CAT-II	CAT- III	Total
Architectural & Engineering Designs	Frequency	0	0	1	1
	Percent	0.0%	0.0%	9.1%	3.8 %
Architectural Design, Supervision & Contract Administration	Frequency	2	0	4	6
	Percent	15.4%	0.0%	36.4%	23.1%
Architectural & Engineering Designs& Supervision & Contract Administration	Frequency	11	2	2	15
	Percent	84.6.%	100.0%	18.2%	57.7%
Other	Frequency	0	0	4	4
	Percent	0.0%	0.0%	36.4%	15.4%
Total	Frequency	13	2	11	26
	Percent	100.0%	100.0%	100.0%	100.0%

Source: Own Survey, February 2018

As can be seen from the above Table 4.6, the respondents are providing various services. Out of the total respondents, 1 (3.8%) is providing Architectural and

Engineering Design Services, 6 (23.1%) are providing Architectural Design and Contract Administration Services, 15 (57.7%) are providing Architectural and Engineering Designs, Supervision and Contract Administration Services and 4(15.4%) are providing additional services besides basic services. This study demonstrated that majority of the consulting firms are providing Architectural and Engineering Designs, Supervision and Contract Administration Services. International experience shows that Architectural firms are engaged in Architectural design and Author control supervision of their design but in

Ethiopia, Architectural Design consulting firms is providing all services including construction works.

Table 4.7 Staff Number of respondent firms with their category

Number of total Staff		Categories of the Architectural Design Firms			
		CAT- I	CAT-II	CAT- III	Total
5 - < 10	Frequency	1	0	8	9
	Percent	7.7%	0.0%	72.7%	34.6 %
10 - <20	Frequency	6	2	2	10
	Percent	46.2%	100.0%	18.2%	38.5%
20 - < 50	Frequency	4	0	1	5
	Percent	30.8.%	0.0%	9.1%	19.2%
50 - < 100	Frequency	2	0	0	2
	Percent	15.4%	0.0%	0.0%	7.7%
Total	Frequency	13	2	11	26
	Percent	100.0%	100.0%	100.0%	100.0%

Source: Own Survey, February 2018

As can be seen from the above Table 4.7, the respondents have variety of staff number. Out of the total respondents, 9 (34.6%) have a staff number between 5-< 10, 10 (38.5%) have a staff number between 10-< 20, 5 (19.2%) have a staff number between 20-< 50 and 2(7.7%) have a staff number between 50-< 100. This study demonstrated that majority (73.1%) of the consulting firms have a staff number

between 5-<20. This study shows that as the number of fresh graduate Architects is increasing year by year, it is impossible for existing Architectural firms to absorb the graduates. This will force new graduate to work alone without gaining the necessary coaching and advice of senior professionals.

Table 4.8 ISO certification level of respondent Firms with their category

ISO Certification Stages of firms		Categories of the Architectural Design Firms			
		CAT- I	CAT-II	CAT- III	Total
ISO certified or compliant	Frequency	3	0	0	3
	Percent	23.1%	0.0%	0.0%	11.5 %
In a process to get the certification	Frequency	3	1	2	6
	Percent	23.1%	50.0%	18.2%	23.1%
Neither ISO certified nor in a process to be certified	Frequency	7	1	8	16
	Percent	53.8.%	50.0%	72.7%	61.6%
Other	Frequency	0	0	1	1
	Percent	0.0%	0.0%	9.1%	3.8%
Total	Frequency	13	2	11	26
	Percent	100.0%	100.0%	100.0%	100.0%

Source: Own Survey, February 2018

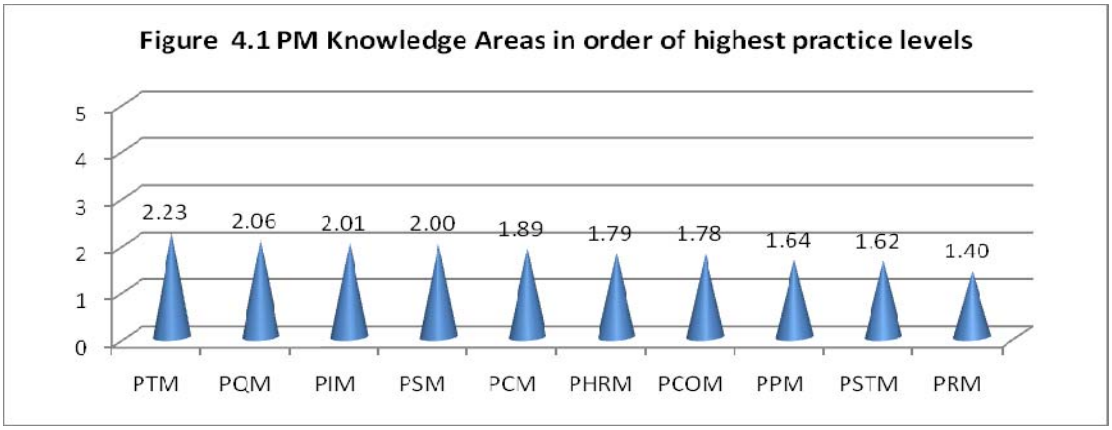
As can be seen from the above Table 4.8, the respondents have different level of ISO certification. Out of the total respondents, 3(12.6%) have already ISO certified, 5 (20.0%) are in a process to getting certification, 16 (64%) are neither ISO certified nor in a process to be certified and 1 (4.0%) is using other management system. This study shows that majority of Architectural Design Consulting firms are not ISO Compliant. As Stephen Emmitt (2007) recommended that Quality Management System is highly effective managerial system that can bring significant benefits to the architectural practice. It is advisable for Architectural design firms to be ISO compliant so that their PM practices to be enhanced.

4.2 Assessment of overall project Management practice

Table 4.9 Overall Project Management Practice of Private Architectural Design Firms					
PMP	N	Minimum	Maximum	Mean	Std. Deviation
Project Management Practice	26	1.04	2.99	**1.84**	0.68

Source: Own Survey, February 2018

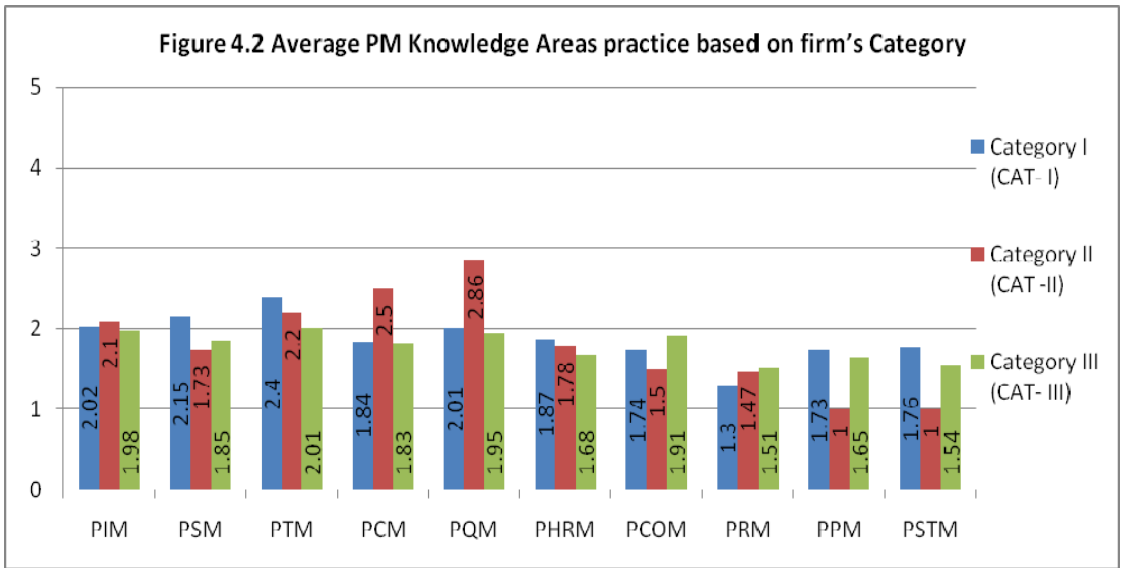
As can be seen from the above table 4.9, the overall project management practice of private architectural design firms' mean score is 1.84 with standard deviation of 0.68 which is approximately at level 2. This study shows that the private architectural design firms are still in the planned stage. Even a recent study conducted on Ethiopian contractors demonstrated that the construction companies are at level 3. Compared to the construction companies' project management practice, Architectural Design firm's project management practice is low. The research conducted by D. Arda Beset (2007) on Turkish Architectural Design offices' project management practice, in three major cities, showed that the project management overall practice of the Turkish firms is at level 2 with mean value of 1.76 which is slightly lower than my finding.



Source: Own Survey, February 2018

As can be seen from the above figure 4.1, the overall project management Knowledge areas assessment shows that private architectural design firms' Project time management is the most practiced knowledge area with mean value of 2.23 and standard deviation of 0.79. It also showed that Project Risk management is the least practiced Project Management Knowledge area with mean value of 1.40 and standard deviation of 0. 51. Even though Project Integration Management is the most crucial Knowledge area, the study showed that this knowledge area on third level next to Project Quality Management knowledge area with a mean value of 2.01 and standard deviation of 0.65. Beset (2007) research showed that the project integration management is the most practiced knowledge area.

4.3 Assessment of PM knowledge areas practice based on firm's category



Source: Own Survey, February 2018

Among the ten Knowledge areas, the total average practice level of Project Time Management was the highest (2.23) and it was higher than the overall practice

level (1.84) (Figure 4.2). This is the case for all categories. Category I was the highest (2.40), second was Category II (2.20) and the third was Category III (2.01). Beset (2007) research showed that a mean value of 1.79 for project time management which is lower than this study finding.

Project Time Management develops and manages the project schedule, to ensure the project complete within the approved time frame, to define the project activities, to execute the schedule, to control the plans during project execution.

Since Architectural design projects require the contribution and integration of the other design professionals schedule development becomes a sine-qua-non. In the traditional setting most of the time sequencing of design activities is very well defined. This makes it easy to develop, control and integrate the schedule of Architectural Design project. Therefore, Architectural Design services are matured in Project Time Management

Project Quality Management targets to satisfy the client, to confirm the requirements, to ensure the fitness to requirements and to ensure the design is fit for use. The average Practice level of Project Quality Management (2.86) is higher than the total average of the ten knowledge areas (1.84). The average of two categories, Category I (2.01) and Category III (1.95) were close to each other and clearly lesser than Category II (2.86). The average score of (2.86) for category II was also the highest and the only knowledge area which reaches to the 3rd level of Project Management Practice (Organizational Standard). Beset (2007) research showed a mean value of 1.70 for project quality management which is lower than this study finding.

Project Integration Management targets to satisfy the client, to confirm the requirements, to ensure the fitness to requirements and to ensure the design is fit for

use. The average Practice level of Project Integration Management (2.01) was higher than the total average of the ten knowledge areas (1.84). The average of two categories, Category I (2.01) and Category II (2.10) were close to each other and clearly higher than Category III (1.98).

Even though the nature of Architectural design process is very much fragmented and the engagement of other parties such as civil Engineers, Mechanical Engineers, Electrical Engineers, etc, are vital for the completion of Architectural Design of a Building, the practice level of Project Integration Management is not considered as crucial Knowledge area in the industry. In contrary to my study, international studies showed that Project Integration management is the most crucial knowledge area. For instance, Grant (2006) stated that Project Integration Management has highest maturity level in his study and Supic (2005) also addressed high practice levels for PM Integration Management in his study (Project Management Maturity of Selected Organizations in Croatia). Beset (2007) research showed a mean value of 2.26 for project integration management which is higher than this study finding.

Project Scope Management ensures that the project includes all the works required completing the project successfully. Project scope Management covers Sub-functions of Business requirements definition, Technical requirements definition, work breakdown structures and scope change control.

Traditionally Project Scope Management is defined by the Architect with close communication to the customer. Program and Quality Standards of the building are clearly defined at the very beginning of the Architectural Design process. Later on, traditional design process itself has stages (Sketch drawings, Preliminary Design,

final design, Construction drawings, Shop-drawings etc.,) that ensure the scope of the project is achieved.

The average Practice level of Project Scope Management (2.00) was higher than the total average of the ten knowledge areas (1.84). The average of two categories, Category II (1.73) and Category III (1.85) were close to each other and clearly lesser than Category I (2.15). Beset (2007) research showed a mean value of 2.01 for project scope management which is slightly higher than this study finding.

Project Cost Management aims to determine the total cost of the project, to ensure the project completes within the approved budget, to estimate the cost of the identified resources, to involve in developing a project baseline, comparing progress against baseline and controlling costs.

The practice level of Project Cost Management was (1.89) slightly higher than the total average of the ten knowledge areas (1.84) and the fifth lowest knowledge area among all ten knowledge areas. The average of two categories, Category I (1.84) and Category III (1.83) were close to each other and clearly lesser than Category I (2.50). In this knowledge area the practice level of Category Ii was also one level higher than the other two categories. Beset (2007) research showed a mean value of 1.67 for project cost management which is lower than this study finding.

Architectural Design Offices most of the time receives customers with two basic requirements; the rough scope of the building and the budget they allocate for the building. Therefore, from the beginning of the Architectural Process the Cost" of the building is at the top of the agenda in most of the meeting. Cost Estimating, budgeting and control are done simultaneously by both the Architect and the

customer. This might explain practice levels of Project Cost Management and awareness of cost issues.

Project Human Resource Management identifies the requisite skills required for specific architectural design and management activities, to identify individuals who have those skills, to assign roles and responsibilities, to manage and ensure high productivity of resources and to forecast future resources needs.

The practice level of Project Human Resource Management was (1.79) slightly lower than the total average of the ten knowledge areas (1.84) and the sixth lowest knowledge area among all ten knowledge areas. This is the case for all categories. Category I was the highest (1.87), second was Category II (1.78) and the third was Category III (1.68). Beset (2007) research showed a mean value of 1.38 for project human resource management which is much lower than this study finding.

Mainly Architectural Design Offices contain between 10-<20 staffs. Usually Architectural design firms with this staff structure managed by the company owner architect. All the staff in the firm deal with the all current on -going projects. Only a few firms have an extra leader who is generally working for the company owner architect for longer periods. This might explain the low practice level of Project Human Resource Management for the Architectural Design Firms.

The purpose of Project Communications Management is to determine the information and communications need of all stakeholders. Thomas et al (2003) stated that effective communication is on of the major challenges to the project's success.

The practice level of Project Communications Management was (1.78) slightly lower than the total average of the ten knowledge areas (1.84) and the seventh lowest knowledge area among all ten knowledge areas. The average of two

categories, Category I (1.74) and Category III (1.91) were close to each other and clearly higher than Category II (1.50). Beset (2007) research showed a mean value of 1.62 for project communication management which is lower than this study finding.

The purpose of Project Procurement Management is to plan all purchases, to plan acquisitions and to plan the contracts. Among ten knowledge areas, the total average practice level Project Procurement Management (1.64) was 8th lowest knowledge area. Two categories reached the 2nd Project Management practice level (planned) with Category I (1.73) and Category III (1.65) and Category II (1.00) was most immature.

Dixon (2000) stated that for many projects, procurement can represent the highest percentage of expenditure. Therefore, all major procurements should be subjected to careful appraisal and management. Dixon states that a procurement strategy should be prepared very early in the project although, recognizes in practice, that such a move is usually driven an external influence, for example, the urgency of the project. Beset (2007) research showed a mean value of 1.90 for project procurement management which is higher than this study finding.

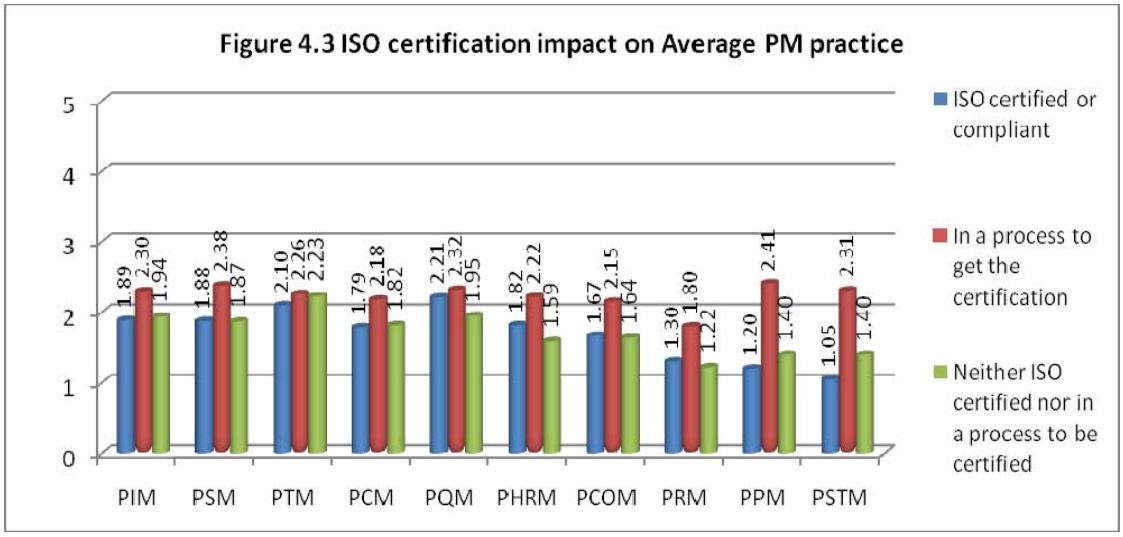
The purpose of Project Stakeholder Management is to identify stakeholders, to plan stakeholder's management, to manage stakeholder engagement and to control stakeholder engagement. Among ten knowledge areas, the total average practice level of Project Procurement Management was 9th lowest knowledge area. Two categories reached the 2nd Project Management practice level (planned) with Category I (1.76) and Category III (1.54) whereas Category II (1.00) was again most immature.

Among the ten Knowledge Areas, the total average practice level of Project Risk Management was the lowest (1.40). Category I (1.30) and II (1.47) were one level lower than Category III (1.51). Project Risk Management was the only Project Knowledge area which was in 1st level (initial) Project Management Practice. Category III was the highest (1.51), second was Category II (1.47) and the third was Category I (1.30).

Kawk also assert the same results for Risk Management and declares that Risk Management's Project Management Practice level was the lowest among 9 knowledge areas. Risk Management was the only knowledge area where overall PM Practice rating was below 3. Kwak concludes that firms should put more effort on Risk Management area by affirming potentiality for substantial improvement (Kwak 1997). Beset (2007) research showed a mean value of 1.30 for project risk management which is slightly lower than this study finding.

The overall PM practice showed that Category I scored the highest mean value of 1.88 whereas Category II and III scored a mean value of 1.81 and 1.79 respectively. Even the categorical assessment showed that all categories of private architectural design firms' PM practice is at level two.

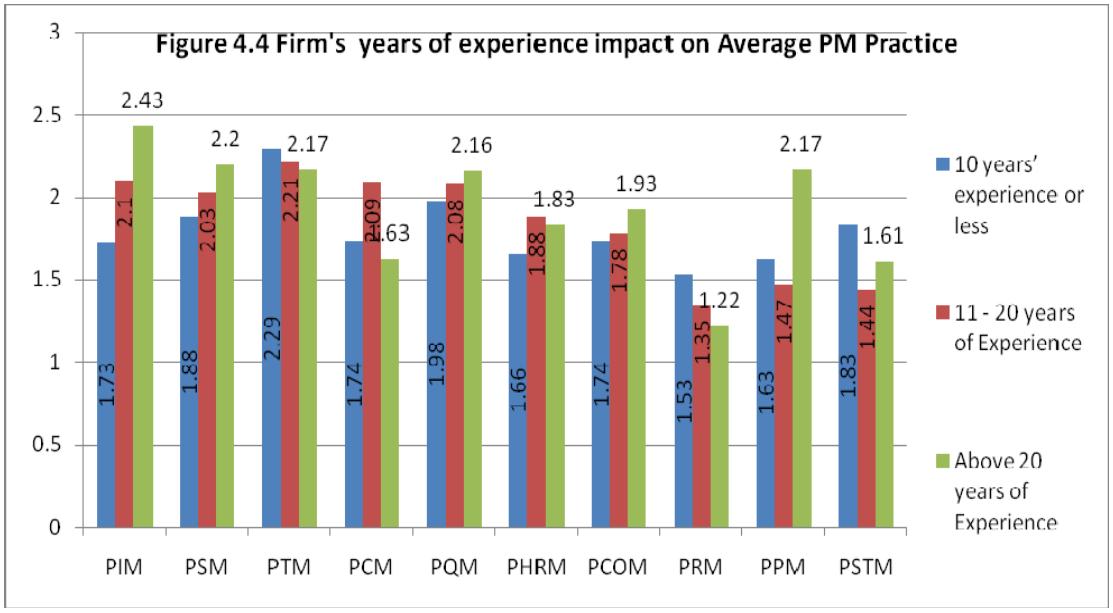
4.4 ISO certification impact on Average PM Practice



Source: Own Survey, February 2018

As can be seen from the above figure 4.3, the impact of ISO certification on project management practice, shows that the firms on the process of getting ISO certification scored the highest mean value of 2.23 where as those firms already certified and neither certified nor in the process of certification scored the mean value of 1.69 and 1.71 respectively. This study showed that those firms in the process of getting ISO certification are better in practicing project management than those already certified. Contrary to my study, Yimam (2011) study on Ethiopian contractors asserted that ISO certified companies' PM Practice level was higher than the companies in the process of getting certification. Besides my experience affirmed that QMS certified private Architectural Design firms were not practicing Quality management system as per the standard.

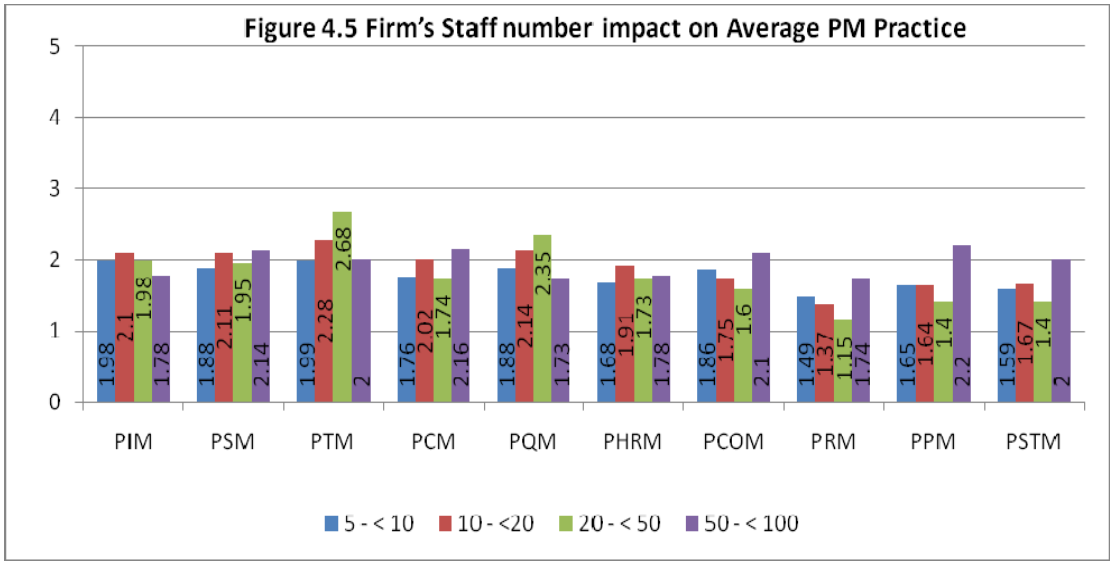
4.5 Firm's years of experience impact on average PM practice



Source: Own Survey, February 2018

As can be seen from the above figure 4.4, the impact years of experience has on project management practice, showed that firms with years of experience above 20 years scored slightly higher mean value of 1.94 where as those firms less than 10 years and between 10-20 years' experience scored the mean value of 1.80 and 1.84 respectively. This assessment showed that those firms whose experiences were more than 20 years in the industry practice PM slightly better. Furthermore, they recognized the importance of project Integration management and scored the highest mean value (2.43).

4.6 Firm's staff number impact on average PM practice



Source: Own Survey, February 2018

As can be seen from the above figure 4.5, the impact of staff number on project management practice, showed that firms with staff number between 50-<100 scored slightly higher mean value of 1.96 where as those firms with< 10 staffs, between 10<20 staffs and 20-<50 scored the mean value of 1.45, 1.90 and 1.80 respectively. In general, the study showed that firms with highest staff number have slightly higher engagement in project management practice. Besides my personal experience in the industry for the last 32 years also asserted that in order to survive in the industry, highly staffed private architectural firms are forced to hire project managers to improve project management practice.

CHAPTER FIVE: SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

This chapter presents the summary of the finding of the study with a brief conclusion and recommendation. The result obtained through the assessment of project management knowledge areas and best practices allows the researcher to identify the gaps and propose a significant outline for improvement of project management practices.

5.1 Summary of Major findings

The main purpose of this study is to assess the project management practice level in private architectural design firms in Addis Ababa, and assess the overall PM practice level in the industry, PM practice level among various categories, and the impact of quality management system application, years of experience in the industry and number of staffs on project management practice.

To this effect the core points of this study focused on addressing the following basic questions:

- What is the overall status of PM practice in Private architectural design firms?
- What is the major difference in project management practice among various categories of Private architectural design firms?
- What is the ISO certification impact on PM Practice of Private architectural design firms?
- What is the year of experience impact on PM practice of Private architectural design firms?
- What is the staff number impact on PM practice of Private architectural design firms?

Descriptive survey method both qualitative and quantitative was employed in the research. The subject of the study were the CEOs, Partners, Chief architects and project Managers who are directly involved in the execution of projects.

In order to arrive at the findings, this study used a structured questionnaire and distributes to those high level staffs of private architectural design firms on purpose. Besides researcher observation was used as an input. The researcher used Random sampling method and used his experience as an input.

Summary of the findings are as follows:

5.1.1 In the survey the project management practice found to be at level two which is below PM practice level of Ethiopian contractors.

5.1.2 The survey also revealed that project time management scored the highest PM practice level than project integration management. As Project Integration Management is a critical knowledge area in coordinating firms and the rest of knowledge areas, firms are required to give attention to this knowledge area.

5.1.3 Generally, the knowledge areas of Time, Quality; Integration, Scope, cost, human resource, Communication, Procurement and Stakeholder management have shown comparatively higher practice level when compared with risk PM knowledge areas. These knowledge areas are more or less being performed at planned level by the majorities of the consultants whereas the knowledge area of Risk management is found to be comparatively at the lowest level of practice. Moreover, the practitioners in the country consider it to be the least important in the management of design projects. For practical purpose the Risk Management knowledge areas could be consider to be totally unknown in the management of design projects in the country or practiced little or by very few in the industry. This is perhaps

due to the low level of awareness and importance given to this knowledge area.

5.1.4 As shown in the study, 64% of the respondents indicated that they were neither ISO certified nor in the process to be certified. Those firms in the process of Quality Management certification had scored highest level of Project management practice where as those already achieved ISO certification scored second. This shows that the QMS certified firms abandoned using the system rather they are back to the traditional system. This indicates that Quality Management System if properly implemented improves the project management practice level.

5.1.5 The study revealed that private Architectural Design firms which had 20 years' experience in the industry scored the highest in project Management Practice. Besides this study shows that the firms which had more than 20 years' experience performed highest in project integration management knowledge area. Therefore, those firms with less than 20 years' experience need to work on institutional set up of their companies for improved project management practice.

5.1.6 The study also revealed that 63.10% of private Architectural Design firms have less than 20 staffs. In addition, the study showed that those firms with staff number between 50-<100 scored the highest project management practice level. Consequently, it is necessary for private architectural design firms to have a proper staff to manage project management practice.

5.1.7 In the survey 46.2% of the respondents indicated that they did not have a project management training at all. Besides the remaining 53.8% respondents did not take full package project management training.

Therefore, this shows that there is a need for proper project management training provision in the industry.

5.2 Conclusions

In light of the summary of findings of the study, the following conclusions were drawn:

The overall Project Management Practice is at planned Level 2. This showed that the industry is performing in a traditional way and this has a direct impact on the delivery of projects.

The private Architectural Design firms are focused in implementing design projects in time than producing integrated designs due to urgency of real estate and industry projects. This has an impact on integrated delivery of design project.

The project risk management practice level in the industry is the lowest of all 10 Project Management knowledge areas. This is one of the major impacts on overall Project Management practice level of Private Architectural Design Firms.

Since 2000, Quality management system was implemented in private architectural design firms by the government capacity building program. Though some of private architectural design firms were certified, in practice those ISO certified firms were found to be working with traditional method. Consequently, this is reflected in low practice level of firms even though the firms were ISO certified. Furthermore, firms in the ISO certification process scored highest PM practice level. This is perhaps due to the focus on process, documentation and implementation that is advocated in the ISO standards, perhaps due to the training and mentoring firms obtained during the certification process and eagerness of firms to be certified.

The private Architectural Design Firms whose experiences were more than 20 years in the industry scored the highest project management practice. Those firms with less than 20 years' experience showed that firms need to institutionalize their organizations to improve their project management practice.

The number of staffs in private architectural design firms is minimal and all project management activities are loaded on owner or chief architect. This is one of the factors that make Project Management practice at planned level.

The activity of PM requires the academic background and relevant training in the field as in the case with other industry organizations. The experience in private architectural design firms staffing in most cases falls short of this criteria. 46.2% of the CEO, Partners, senior Architects and project managers are not even attended single day training on project management. This has a major impact on the quality of output and efficiency of project delivery.

5.3 Recommendations

The low level of PM practice found for the Category I, II and III private Architectural Design Firms shows how low the PM practice in the industry overall is. Thus, improvement efforts need be under taken to improve the current condition in the industry. In this regard the researcher recommends the following specific actions to be undertaken.

5.3.1 As Private Architectural Design firms are at level two project management practice, they should implement consistent and comprehensive approach to project execution at firm level by establishing Project management office for improving the project management Practice level.

5.3.2 Project Management Integration knowledge area should be provided the highest focus in order to improve the overall project management practice of the industry.

5.3.3 The Private Architectural Design firms should also address the least practice level of Project Risk Management by creating awareness and implementing it step by step.

5.3.4 ISO Certified Private Architectural Design firms should work to re-establish the quality management system to improve their PM practice level where as the firms in the process of certification should complete the process and the non -ISO certified firms should be encouraged in implementing Quality Management System for improved PM practice.

5.3.5 Private Architectural firms should institutionalize their companies by admitting senior and junior partners in their companies for enhanced project delivery and continuity of firms.

5.3.6 Private Architectural Design Firms should employee the required staff to mange projects' quality, time and cost and to enhance their project management practice.

5.3.7 Private Architectural Design Firms should provide training to their project staff on project management for proper implementation of projects.

5.3.8 Finally, the researcher recommends for further research to include category IV-VI firms in Addis Ababa, government firms and private firms located out Addis Ababa. As this study only focused on category I-III private Architectural Design firms in Addis Ababa.

REFERENCES

Abbasi, H. Y., & Al-Mharmah, H. (2000, April), ***Project management practice by the public sector in a developing country****, International Journal of Project Management, 18(2), 105-109.*

*Ahlemann, F.; Teuteberg, F. & Vogelsang, K., (2009), "****Project management standards – Diffusion and application in Germany and Switzerland****", International Journal of Project Management 27.*

Ali A, (2010), ***Investigating Project Management Practices in Public Sector Organizations of a Less Developed Country****, PhD dissertation, School of property Construction and Project Management, RMIT University, pp 23.*

Artto, K. A., (2001), ***Management of Projects as Portfolios****, Editorial, Project Management, Vol. 7. No. 1. pp. 4-5.*

Arzymanow A., Cooke-Davis J. & Terence. (2003), ***The Maturity of Project Management in Different Industries: An Investigation into Variations between Project Management Models****. International Journal of Project Management, 471-478.*

Association of Project Management (APM), (2006), ***APM Body of Knowledge****. 6th edition.*

Beset A.Arda, (2007), ***A model for assessing project management maturity level of architectural design offices (ARCH-PMM),*** *PhD Dissertation, Graduate School of Engineering and Sciences of Izmir Institute of Technology, izmir.*

Cleland, D. I., & Ireland, L. R. (2002). ***Project management strategic design and implementation (4th ed.)****, The McGraw-Hill Companies.*

Cooke-Davies (2002), ***"Project management maturity models – does it make sense to adopt one?"****, Project Manager Today, p 1-4.*

*Cooke-Davies, & A. Arzymanow (2003, May), "****The maturity of project management in different industries: An investigation into variations between project management models****", International Journal of Project Management, Vol 21, p 471-478.*

Crawford, J. K. (2002), ***Project management maturity model: Providing a proven path to project management excellence****. Basel, Switzerland: Marcel Dekke.*

*Crawford, L.; Pollack J.; & England, D., (2007) "****How Standard Are Standards: An Examination of Language Emphasis in Project Management Standards****", Project Management Journal.*

Crawford, J.K. (2006), ***Project Management Maturity Model****. Auerbach Publications, New York, USA.*

Cusworth, J. W., & Franks, T. R. (Eds.), (1993), ***Managing projects in developing countries****. Longman Publishing Group.*

Douglas R. Parker (2009, January), ***Integrating Project Management and Design****, Design intelligence update free e-newsletter.*

Dr S. G Naoum (2007), ***Dissertation research & Writing for Construction Students****, second edition, Elsevier, UK.*

Duncan, W.R. (1996), ***A guide to the project management body of knowledge****. Upper Darby, PA: Project Management Institute.*

*Ford, M., (2008) "****We need a project management standard",*** *Conference and Incentive Travel.*

Liviu, Emil & IOANA (2010), ***Best Practice in Project Management, Review of International Comparative Management****, Volume 11(1).*

*Kendra, K. & Taplin, L.J. (2010), '****Project success: A cultural framework'****, Project Management Journal, 35(1), pp 30-45.*

Kerzner, H, (1995), ***Project Management 5th Edition****. New York: Van Nostrand Reinhold.*

Kwak, Y. H., & Ibbs, C. W. (2002, July), ***Project management process maturity-PM2 model****, Journal of Management in Engineering, 150-155.*

Kawak, & Young Hoon. (1997). ***A systematic approach to evaluate quantitative impact of PM****, PhD Dissertation, University of California, Civil Engineering Department, Berkeley.*

*Milosevic, P Patanakul (2005), "****Standardized project management may increase development projects success'****, International Journal of Project Management, Vol 23, p 181-192,*

Morris, P.W.G. (2001), ***Updating the Project Management Bodies of Knowledge****, Project Management Journal, Vol. 32, pp. 21 – 30.*

Muriithi, N., & Crawford, L. (2003), ***Approaches to project management in Africa: Implications for international development projects****, International Journal of Project Management, 21, 309-319.*

Project Management Institute, (2013), ***A guide to Project Management Body of Knowledge*** *,5th edition.*

Sean Maserang (2003), ***Project management: Tools and techniques****, http://www.umsl.edu/~sauterv/analysis/488_f02_papers/ProjMgmt.html.*

SEI, CMMI-SW. (2002), ***Capability Maturity Model Integration****, CMMI Staged presentation, SEI.*

Shenhar, A. J., Tishler, A., Dvir, D., Lipovetsky, S., & Lechler, A., (2002), ***Refining the search for project success factors: A multivariate, typological approach****, R&D Management, 32(2), 111–124.*

Soderlund, J. (2004), ***Building theories of project management: Past research, questions for the future,*** *International Journal of Project Management, 22(3), 183–191.*

Whitty, S. J. & Maylor, H., (2009), ***And then came Complex Project Management (revised)****", International Journal of Project Management 27 12. www.aipm.com.*

William G. Ramroth, JR, AIA, (2006), ***Project management for design professionals****, Kaplan Publishing.*

Wouhib Kebede, (2003, December), ***Registration & Licensing,*** *AEA Annual Journal, page 10.*

Van der Waldt, G. & Knipe, A., (1998), ***Project management for strategic change and upliftment****. Johannesburg: Thomson.*

Voropajev, V. I. (1998), ***Project management development for transitional economies (Russian case study****, International Journal of Project Management, 16(5), 283-292.*

ANNEX: QUESTIONNAIRE

Dear Respondent,

Thank you for taking part in this questionnaire for my research paper. Your input will be much appreciated.

The study focuses on the topic **"Assessment of project management practice in selected Private Architectural Design Firms in Addis Ababa"**. It is being conducted for my partial fulfillment of the requirement for the Degree of Master of Arts in Business Administration (MBA). Hence, I am requesting you, as a CEO or Chief Architect or project Manager, to share your opinion and provide me information based on your experience on the project.

Through your participation in this research, you would be able to assess the practice level of project management function in your firm; where your firm is competent and where it lags; how well your firm is doing compared to your peers internationally, and that you need to focus on to develop and improve project management functions in your firm. Up on completion of my research; I will share the executive summary of this study via your email.

Needless to say, all data/information provided will be treated with strict confidentiality.

My final research paper will be submitted to the Indira Gandhi National Open University (IGNOU).

With respect and many thanks,

Addis Adugna Amanu (Mr.)

Part I – General Information

Instruction: Please provide the requested information on the space provided or underline your choice.

1. Position/role in the company (Required) …….

2. Sex

A. Female

B. Male

3. Highest Educational Qualification

A. PhD

B. Master's Degree

C. Bachelor Degree

D. Diploma

4. Have you received any Project Management related training?

A. Yes

B. No

If yes, what was the highest level of training you received?

A. Masters level

B. Bachelors

C. Certificate

D. Short-term training

E. As a course in a related program of study

F. No training

G. Other (please specify) …….

5. Have you worked in project related work?

A. Yes

B. No If yes for how long? ……

6. Your organization is …

A. Local private limited company

B. Local share Company

C. Foreign company

D. Joint venture of local and foreign company

E. Sole Proprietary

F. Other (please specify) ……

7. What is the Category of your organization?

A. Consulting Architects

B. Consulting Architects & Engineers

C. Other (please specify) ……

8. What is the level of your organization?

A. Category I (CAT- I)

B. Category II (CAT -II)

C. Category III (CAT- III)

D. Other (please specify) …….....

9. Approximately, for how long has your organization been in the consulting business?.....

10. What is the major type of consultancy your organization usually performs?

A. Architectural Design

B. Architectural & Engineering Designs

C. Architectural Design, Supervision & Contract Administration

D. Architectural & Engineering Designs & Supervision & Contract Administration

E. Other (please specify) ……

………

11. Your company is

A. ISO certified or compliant

B. In a process to get the certification

C. Neither ISO certified nor in a process to be certified

D. Other (please specify) …….

Part II- Project management maturity questions

General Direction: *Please respond using* ✓ tick mark *in provided table.*

Please Answer all the Questions to enhance the objectivity of the research based on your knowledge of practice *of Project Management in the project you are participating or in the firm you are working... (Please Choose:* only one answer per question)

Level 1 (L1): **initial** --- Although there is awareness about project management, there are no formal practices or standards for it. Documentation is very weak. Architects are of a need for project management for the architectural design process. All the activities during the process are ad-hoc.

Level 2 (L2): **Planned** ---- During design processes, many different project management processes are applied but there is no standardization. Documentation is basic but the links are not formed between the documentation activities. Office Management supports the project management but the architects are suffering to apply these to all design processes. There is no systematic application of the management activities. Success is dependent to the architect's experience.

Level 3 (L3): **Organizational Standard** --- All the project management processes are in place and established as architectural design Firm's own firm standards. All the other stakeholders of the process like client, other engineering design Firms, and the architects act as one project team. Architectural design Firm establishes its own processes and standards with formal documentations. Firm managers are involved in the key decisions and they are also involved in the approval of key documents and other project issues. All the processes of the design in the architectural design firms are automated. Each project is evaluated and managed in light of other projects.

Level 4 (L4): **Managed** --- Projects are managed in the light of future plans of the architectural design firm. While doing this, the consideration of the previous processes is not neglected. Firm managers use efficiency and effectiveness metrics to make decisions regarding the current project and realize the impacts on other projects. All projects, changes and other issues are evaluated based upon metrics from cost estimates, baseline estimates and earned value estimations.

Level 5 (L4): **Continuous Improvement:** Processes are actively used by the firm managers for the improvement of the project management activities. Lessons learned are used for improving the project management processes, standards and documentations. All the staff of the architectural design firm not only focuses on the current project activities but also focuses on the continuous improvement. All the collected metrics during the execution of the project processes are also used for the future decisions.

No.	**General**	Level				
		L1	L2	L3	L4	L5
1	Is the need and benefit of Project Management recognized by your firm's management?					
2	Does your firm's management provide support for Project Management development?					
3	Does your organization have a central Project Management office that provides project management support for the projects of the organization?					
4	Does your firm have standard Project Management processes and methodologies?					
5	Does your firm provide Project Management training for its Project Management team?					
6	Do Project Managers of your firm have solid knowledge base of Project Management?					
7	Are Project Management processes, methodologies and procedures applied formally in managing projects in your firm?					
No.	**Project Integration Management**	Level				
		L1	L2	L3	L4	L5
1	Is there awareness about the importance of Project Integration management in your firm's and Project Management team?					
2	Is there any effort of Integration management in your firm?					
3	Is the effort of Integration management formal?					
4	Is there project charter development procedure for your firm?					
5	Is there project management plan development procedure for your firm?					
6	Is there project directing and managing procedure in your firm?					
7	Is there project monitoring and controlling procedure in your firm?					
8	Is there any change control mechanism in your firm?					
9	Is there proper project closure procedure in your firm?					
No.	**Project Scope Management**	Level				
		L1	L2	L3	L4	L5
1	Is there awareness about the need or importance of project scope management in your organization's and Project Management team?					
2	Is there any effort of managing project scope in your firm/project?					

3	Is the effort of scope management planning formal?					
4	Are Computer applications or tools used in scope management process?					
5	Are the requirements collected in defining scope in your project?					
6	Is the project's scope defined?					
7	Is WBS (work breakdown structure) prepared in defining scope in your project?					
8	Is a WBS Dictionary prepared ?(document providing description of work ,code of accounts identifier , responsible department ,resource required etc.,)					
9	Is there any mechanism in validating scope in your project?					
10	Is there any effort of monitoring and controlling scope in your project?					
11	Are work results reviewed or inspected to ensure or verify that all scope of the work is complete?					
No.	**Project Time Management**	Level				
		L1	L2	L3	L4	L5
1	Is there awareness about the importance of project time management in your firm's and project management team?					
2	Is there any effort of managing time in your project?					
3	Is the effort of time management formal?					
4	Is a schedule management plan prepared for the project?					
5	Is the schedule base lined? (start and finish date are approved and fixed)					
6	Are Network scheduling method (such as CPM, or PERT) used?					
7	Are computer tools such as Microsoft project, Primavera , Excel etc used for scheduling If yes; Please write the name of tool …….					
8	Is WBS used when defining the schedule activities?					
9	Are relationships among activities identified and the activities sequenced?					
10	Is estimate of resources (materials, people, software …) needed prepared?					
11	Is resource leveling done?					
12	Is activity duration estimate prepared?					
13	Are the firm's historical data used in estimating activity duration?					
14	Is schedule developing for your project?					

15	Is progress of project activities continuously monitored and controlled?					
15	Is Earned value management used in controlling the schedule?					
16	Is S-curve method used in monitoring and controlling the schedule?					
17	Is the project schedule updated?					
		Level				
No.	**Project cost Management**	L1	L2	L3	L4	L5
1	Is there awareness about the importance of project cost management in your firm?					
2	Is there any effort of managing cost in your project?					
3	Is there formal cost management plan prepared in your project?					
4	Does the estimate detail cost of labor, material, and equipment separately?					
5	Is WBS used in preparing the estimate?					
6	Is the firm's historical actual cost data consulted in preparing the cost?					
7	Is cost-estimating software used in preparing the estimate or managing cost?					
8	Is a budget determined for the project?					
9	Is the budget time phased? (Does the budget indicate the amount on each phase)					
10	Does the budget show the amount allocated for resources by category?					
11	Is WBS used in preparing the budget?					
12	Is the budget base lined?(the budget allocated to work packages and resources,					
13	Is the budget updated regularly?					
14	Is there any effort to monitor and control the project cost?					
14	Is the project cost tracked against the baseline on regular update cycle?					
15	Are costs of labor, equipment, and material, tracked separately?					
16	Is variance analysis (difference of budgeted and actual cost) performed?					
17	Are Budget forecasts (cost to completion,) prepared and updated?					
		Level				
No.	**Project Quality Management**	L1	L2	L3	L4	L5
1	Is there awareness about the importance of Project Quality Management in your firm's and project management team?					
2	Is there any effort of managing quality in your project?					
3	Is project Quality Management effort					

	Formal?					
4	Does your firm have quality management policies, procedures and guidelines?					
5	Is formal quality management planning performed for your project? (requirements and quality standards are determined and strategies are devised)					
6	Are Quality Assurance activities performed in your project?(these are processes, procedures and standards defined/developed to assure quality objectives are met)					
7	Is quality audit done in your project? (a review to determine whether project activities comply with policies, processes, and quality requirements)					
8	Is Total Quality Management (TQM) implemented in your project?					
9	Is Quality Control process implemented in your firm?(determining whether projects and its activity comply with the relevant quality standards and plans.)					
10	Does your project/firm inspect and control quality of sub-consultant's work to ensure compliance with requirement?					
11	Is there quality department or employees specializing in quality management?					
No.	**Project Human Resource Management**	Level				
		L1	L2	L3	L4	L5
1	Is there awareness about the importance of Project Human Resource management in your form's and Project Management team?					
2	Is there any effort of Human resource management in your firm or project?					
3	Is formal Human Resource management planning performed for your project?					
4	Is there any planning for acquisition and management of human resource?					
5	Is project organization chart prepared for your project?					
6	Is Skill requirement, Roles and Responsibilities defined for all Project positions?					
7	Is training (formal/informal) provided to project team members?					
8	Is performance of team members tracked regularly and feedback provided?					
9	Is human resource cost and time formally tracked, and monitored in your project?					
No.	**Project Communication Management**	Level				
		L1	L2	L3	L4	L5

1	Is there awareness about the importance of project Communication management in your firm's and Project Management team?					
2	Is there any effort of Communication management in your firm or project?					
3	Is formal project communication management planning performed for your project?					
4	Is Project Communication requirement analysis performed in your project?					
5	Is a plan/strategy prepared to address identified communication needs?					
6	Does your project have a system/procedure for handling project documents?					
7	Does your project have a system for collecting and distributing information?					
8	Are performance reports prepared and provided to relevant stakeholders?					
9	Does your project/firm have a standard format for preparation of reports?					
10	Does your project/firm have a standard format for controlling communications?					
	Project Risk Management	Level				
		L1	L2	L3	L4	L5
1	Is there awareness about the importance of project risk management in your organization's management and project management team?					
2	Is there any effort of managing risks in your project before they cause adverse effect?					
3	Is risk management performed formally in your project/organization?					
4	Is there any effort of identifying and documenting risks in your project?					
5	Is risk break down structure (RBS) used in the identification or planning of risk?					
6	Is SWOT analysis (Strength, weakness, Opportunity and treat analysis) performed?					
7	Are identified risks analyzed to determine their potential impact?					
8	Is the chance of occurrence of risks estimated (for example as low, medium, High)?					
9	Are risks prioritized based on factors such as impact, probability, urgency etc?					
10	Is Qualitative risk analysis done? [Example: risk urgency assessment, risk categorization, risk data quality assessment etc,.]					
11	Is Quantitative risk analysis done? [example : simulation , decision tree analysis etc]					
12	Is risk response strategy developed for					

	the prioritized risks? (example : avoid, transfer, mitigate, accept)					
13	Is a detailed risk response plan prepared for risks that warrant action/attention?					
14	Is the risk response plan and strategy continuously updated?					
15	Is contingency time allowed in project schedule for potential risk impact?					
15	Is contingency budget reserved for potential risk impact?					
16	Is risk monitoring and control performed in your project? (Is there any effort of identifying and documenting new risks, closing those outdated and tracking those already identified)					
17	Is risk audit performed in your project?(Examining & documenting the effectiveness of risk response strategy, and the risk management process)					
18	Is risk register/ log used in the risk management / (to document identified risks with their attributes & to tack their status while monitoring & Controlling)					
No.	**Project Stakeholders Management**	Level				
		L1	L2	L3	L4	L5
1	Is there awareness about the importance of stakeholder management in your organization's and project management team?					
2	Is there any effort of identifying stakeholders and responding to their need?					
3	Is stakeholder's analysis done for your project?					
4	Is a stakeholder management plan prepared (is there a devised strategy on how to handle the stakeholder's needs and expectations)?					
5	Is there any continuous effort of communicating and working with stakeholders to influence their expectation, address their concern and resolve issues?					
6	Is a strategy developed for managing each key stakeholder's expectation?					
7	Is a strategy developed for controlling each key stakeholder's engagement?					

THANK YOU FOR YOUR TIME AND SUPPORT

Please return the completed questionnaire to addisad@gmail.com .

NOTE: Please save the completed questionnaire (file) to a local drive on your computer before you E-mail it.