



PERFORMANCE MANAGEMENT IN CONSTRUCTION PROJECTS

Master thesis

**International Master of Science in Construction and Real Estate Management
Joint Study Programme of Metropolia UAS and HTW Berlin**

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FARHAN AHMED

Registration number: s0557514

First Supervisor: Pro.Dr.-Ing. Dieter Bunte

Second Supervisor: Pro. Roode Liias

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[Copy of proposed conceptual formulation]



International Master of Science in Construction and Real Estate Management
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Conceptual Formulation

Master Thesis for Mr./Ms. Farhan Ahmed
Student number s0557514

Topic:

“PERFORMANCE MANAGEMENT IN CONSTRUCTION PROJECTS”

Introduction:

The construction industry is essential for the development of any nation. In numerous ways, the pace of the economic growth of any nation can be measured through the development of physical infrastructures, such as buildings, roads and bridges etc. construction project development involves various parties, processes, different phases and stages of work and a lot of contribution from both general society and private areas, with the significant aim to bring the project to a successful conclusion.

The level of accomplishment in doing construction project development activities will depend vigorously on the quality of the managerial, financial, technical and organizational performance of the parties that are involved in it, while contemplating the related risk management, the business environment and financial and political dependability.

According to Wang (1994), *“a more sophisticated approach is necessary to deal with initiating, planning, financing, designing, approach, implementing and completing a project because construction is becoming more and more complex now a days”*.

The common evaluation of the accomplishment of construction projects is that they are delivered on time, to budget, to technical specification and meet client satisfaction. However the criteria for achievements are in truth much more extensive, incorporating the performance of stakeholders, assessing their commitments and comprehension their expectations.

A stakeholder could be an individual or group, inside or outside the construction project, which can influence the construction performance because he has a stake in it. Construction project potentially can have different sets of stakeholders for example client, consultant, contractor, supplier, end-user and community.

According to Atkinson, et al. (1997), *“successful construction project performance is accomplished, when stakeholders meet their perquisites, individually and collectively”*. However, it is important for the stakeholders to address and recognize the three orientation criteria that exist in the life cycle of a project: The **procurement**, the **process** and the **result** orientation, in order to meet their requirements and continual participation.



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University of Applied Sciences

Projects are organized to achieve complex tasks that cannot be handled by an individual but the multidisciplinary teams in the construction industry. Extend achievements depends upon how well the personnel can work effectively to accomplished objectives with in scope, cost and quality limitations.

Performance management is a persistent procedure to identifying, measuring and developing performance in organizations by linking each individual performance and objectives to the organization's overall mission and goals. Performance management is the process of creating a work environment or setting in which individuals are empowered to perform to the best of their abilities. It is the fundamental vehicles for the managers to communicate what is required from employees and give feedback on how well they are achieving job goals.

The performance of a successful project is measured by three elements.

- *Technical success according to agreed project objectives.*
- *Performance on project schedule (complete on time).*
- *Performance on budget (finished within financial constraints).*

A manager should need to adopt performance management practices that will encourage continuous and ongoing development of your department team in order to deliver departmental objectives. The underlying supposition is that by managing the performance of individual and team, departmental and organizational will follow and by raising individual and team levels of performance, organizational performance will also improve. Similarly when performance of individual is not managed, this can lead to frustration and discontent amongst team members.

Objectives:

As within the construction industry, a great deal of effort is normally spent on measuring the traditional performance that indices like cost and schedule where as the evaluation of the overall project performance is carried out in a less structured or in a very subjective manner. So an integrated framework for project performance measurement is required to formalize the way contractors evaluate performance of construction projects.

One of the main targets of the thesis is to frame the aspects required for the efficient performance in construction industry, which are vital that projects member and engineers need to know about. The thesis will also includes study of various performance measurement methods that can be adopted and also those are being used in existence to carry out the project successfully and smoothly. The thesis also proposes a methodology that quantifies separately the performance of the major objectives of a project in order to measure the overall performance.

It will be done via questionnaire survey, researches, and existing case studies. The measures will be derived by taking study on various literature collected regarding performance measurement. Based on the performance measures a questionnaire will be prepared to carry out the survey. The data collected will used to interpret results and based on the results suitable suggestions will be made to improve the performance management.

Research Questions:

Some research questions that can be investigated in order to achieve the objectives of this thesis work are:

- *What is Performance management?*
- *What types of strategies are involved in performance management of a project?*
- *What are the benefits of Performance management?*
- *What are the processes of performance measurement for construction projects throughout the world?*
- *What prototype methods and techniques are being used to measure construction project performance? What are the flaws? And how we can improve these methods? Is there any alternatives?*
- *What is employee performance? How to measure employee performance?*

Need For Study:

In the present situation of the construction industry it is imperative to measure the performance of the project to check whether the work is in line with the strategies of the organization. In any case it is not being followed in many organizations, as they are keener towards the financial turn over for the company regardless of the performance.

I think it is important to measure the performance of the workers and the associated parties based on the non-financial performance measure. This procedure will help the representatives to know about the work nature and also he can track the performance by self.

The thesis includes identifying various aspects and methods that can be used in the projects which are essentials for the improvement and measurement of performance of the people that are involved in it and as well as work that needs to be done in order to complete a project effectively.

The thesis will likewise help the people to identify the roles and responsibilities, the measure can be utilized to overhaul the knowledge of various individuals towards the project scenario and the same can be implemented for the successful completion of a project. The same measure can also helpful for the members to have a track on their own performance and it would be beneficial for the project managers in guiding the engineers under him and can bring the best out of his employees and lastly the effectiveness and efficiency of the workers can be increased by defining their roles via performance measure.

Methodology:

The methodology of the thesis includes choosing a title. Then the Literatures based on the project will be collected through different mediums i.e. researches, books, case studies, internet and industrial interviews etc. Then work done on the similar projects will be understood. Then the study area will be defined. Then the methodology will be framed how to proceed the project.

The methodology involves study on the performance management and identifying the performance management methods in practice and different aspects of the construction project with respect to those methods will be framed out. Then the questionnaire survey

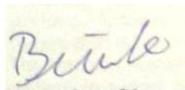
would be prepared. The same will be used to collect data from different people of various companies.

I think the survey should be done to check the awareness of the aspects among the respective people. The questionnaire prepared will be a weighted scale type. Then the data obtained from survey are analyzed and results are obtained. Based on the obtained result suitable suggestions are made that should be done to enhance the performance.

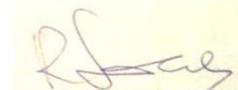
Thesis Schedule:

The schedule of thesis will be planned in such a way that the work on the objectives and congregation of data will be done up-till at summer 2017. The surveys will be conducted along with the writing and detailing of the thesis from autumn 2017 to spring of 2018. After that minor adjustment and detailing will be done from spring 2018 to summer of 2018. Eventually the process will end up to graduation in the end of the summer 2018. The schedule of studies is as below.

S.No	Activities	Dates	Place
01.	Master's thesis project starts.	1st of April, 2017	Helsinki
02.	First Draft.	1st of June, 2018	Berlin
03.	Final Draft.	20th of July, 2018	Berlin
04.	Master's thesis project completed by	25th of July, 2018	Berlin
05.	Master's thesis Submission.	30th of July, 2018	Berlin
06.	Master's thesis Presentation.	29th of September, 2018	Berlin



Supervisor 01
Dr.-Ing. Dieter Bunte
Dieter.Bunte@HTW-Berlin.de
+49 30 5019-4239



Supervisor 02
Pro. Roode Lias
roode.lias@ttu.ee

ABSTRACT

Construct project success basically depends upon the efforts and performance of a person that are involved in it and also how well they are performing in a team in order to achieve the aims within the limitations of scope, cost, time and quality. Project are organized usually by multidisciplinary teams because of high level of complexity that are impossible by a single individual to handle. Project engineers and managers are required to integrate the multi-disciplines with the organizational affairs along with the changing environment in order to complete the project in a successful and structured manner. These individuals are operating individually but in a chain of command for single aim to achieve the goal and objectives of a project along with limited resources. Therefore they are equally responsible for the success and failure of the project. Hence there is a need for performance management system in order to manage and control the organizational and employee performance. For that a famous saying is “if you cannot measure it you cannot manage it”. Performance management is basically a system in which employee are encouraged to work effectively and efficiently in a tem with in the line needed by an organization.

Measurement of performance is important in the construction sector because it is a way to improve the competitiveness in the long-run. Most of the construction firms in UK is practicing performance measurement system because they believe that it help them to increase the performance and productivity of their business. They also believe that it plays an important role in keeping the organization on track for achieving their strategies and goals. However there are other organizations who think that it is helpful for that identification of areas where performance is good or bad but it did not help in creating and developing an appropriate strategy for an organizations. In order to achieve and improve the performance targets a step-by-step strategic guidance is required by an organization. The first step for the achievement of performance target is to understand the performance measurement system of an organization and then identify the strength and opportunities along with the criteria's that are required to be measured in order to improve their business which can increase and maximize the profit as well, so in this way

organizations can identify the target relevant performance measurement and include them in their strategy for improvements. This research aims to identify the appropriate tools to make improvements in the performance measurement practices of construction industry. This research also assist organizations to implement performance measurement methods in an appropriate and proper manner.

First step of the thesis is to do the literature review about the performance management and measurement as well as to understand the key definitions and current practices along with the identification of tools and models that are being used now a days. Findings shows that BSC and EFQM are the most famous and commonly used models in all sectors including construction industry. Literature review also determines that performance measurement helps in developing the organizations strategies which are the basics for performance management. Moreover it helps in improving the overall performance in the business of an organization. It has been identified that financial and non-financial aspects are important criteria's that need to be considered and measure.

Findings shows that organizations strategy can be developed by understanding the performance measurement process of an organization which in turns helps in identifying the criteria's that needed to be measured in order to maximize the profit and performance of an organization in their business. This will lead to the development of the framework which is also called performance measurement migration path. Lastly the evaluation of the framework is done which determine its stability and acceptance to the construction industry for the improvement of performance measurement implementation within an organization.

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LIST OF ABRIVATIONS

JIT	Just-In-Time
TQM	Total Quality Management
BRP	Business Process Reengineering
US	United States
UK	United Kingdom
KIPs	Key Performance Indicators
BSC	Balance Score-Card
EFQM	European Foundation for Quality Management
SMART	Specific, Measureable, Achievable, Relevant, Time
BQF	British Quality Foundation
PMS	Performance Management System
MBNQA	Malcolm Boldridge National Quality Award
PMPA	Performance Management Performance Assessment
CSF	Critical Success Factors
PEC	Pakistan Engineering Council
CII	Construction Industry Institute
CMM	Capability Maturity Model
PAK	Pakistan
DAGP	Department of Auditor General of Pakistan
IOSAIs	International Organization of Supreme Audit Institute
CIMP	Construction Industry Master Plan
STEPS	Start-up, Take-off, Expansion, Progress and Sustainability
CLEVER	Courageous, Legacy, External, Volunteer, Experiment, Rejoice
PM	Performance Measurement
KM	Knowledge Management

CHAPTER 01

INTRODUCTION

1.1 Research Background

Construction industry plays an important role in the development and economic growth of any nation. The pace of economic growth can be measured through the development of different construction projects such as roads, highways and bridges etc. Different parties, processes area involved in the development of construction project as well as many contributions from both general and private parties in order to complete the project in a successful manner.

Different aspects such as managerial, financial, technical and organizational performance of parties involved in a project plays an important role in order to know the level of achievements in the development of construction project. The criteria for accomplishment is that the project should be delivered on time, in budget and it should also met the client requirements but in reality this criteria is much more intensive and complex because performance, commitment and expectations of the stakeholders also need to be taken into consideration.

Basically multidisciplinary teams are required in the construction industry to carry out the project because it is complex task and cannot be done by single individuals. The achievements depend upon the performance of persons involved that how well he is achieving the targets within the scope, quality and cost limitations. Performance management is basically a procedure through which performance and objectives of each individuals is linked to the organizational goals and missions by the identification, measurement and development of performance.

Project management is a procedure in which individuals are encouraged to execute at their best capabilities. It is an essential tools of communication for managers to know what is required from employees in order to achieve job goals in an adequate manner.

There are three ways and elements to measure the performance of successful project.

- Performance on timely completion.
- Performance on completing the project within the budget.
- Technical achievement on decided aims.

In order to achieve the departmental objectives, managers should espouse those performance management techniques which enhance the incessant evaluation of the department team. The fundamental belief is that organisational performance can be improved by focusing on and managing the performance of individuals and departmental teams. Similarly, the overall performance of the project is effected if the performance of an individual is not managed in proper and structured manner that can lead to obstruction and dissatisfaction among the team.

1.1.1 Performance Management in General

Nowadays, one of the primary targets for organisations is to gain competitive advantages. To gain and sustain competitive advantages many industries, primarily manufacturing shifted their traditional patterns and adopt new methods and techniques. Which helps to paved the way to new philosophies in manufacturing and services sectors such as synchronized engineering, lean construction as well as towards others for example JIT, TQM and BRP (De Wilde de Ligny, 2001). The idea behind these philosophies was to optimize the external and internal performance of an organization which lead towards reassessing the performance management systems through gaining competitive advantages as well as through performance measurement (Kagioglou, 2001).

The main rivulet of performance management system process is that company's performance should be reviewed by keeping in mind the functional and corporate strategies and aims. The primary objective is to create a closed loop control system whose function is to deploy corporate and functional policies to all business procedures, actions and errands proactively. Finally performance measurement system will produce the results. Therefore the process of decision making, systematic management and

taking actions within the organisation can be supported and coordinated by this process (Schalkwyk, 1998).

Performance measurement process is a parameter that describes how effectively the organisation and individual are achieving their aims and approaches. To monitor and observe qualitative signs, this process helps to measure results of structural and operative strategies in a computable manner. Thus as suggested by (Bititci, 1997), “The performance measurement system is the information system which is at the heart of the performance management process”. The effective and efficient functioning of performance management system is of great importance.

Traditionally employee’s sales, efficiency, return on investments and profit per unit production etc are the only financial measure on which the performance measurement system were based on. So those organizations can only identify their past performance but not the factors that contribute to achieve that performance (Kagioglou, 2001). The exclusive dependence on these financial measures in management system permits only short-term behaviour. This short-term focus results in long-term viability issues of the organisation which affects the growth.

To determine and stimulus the company’s future business it is suggested that business performance measurement should embrace essential business drivers and look beyond traditional financial measures (Love, 2000). It is already being said that organizations have to measure their performance in order to know what changes are required and needed for success. In management business, it is believed that the key to success is the development of organisation and precise measurement.

1.1.2 Performance and strategic management in construction

Previously, a transformation in the construction industry was inevitable. As well as many times professional describes the inefficiencies and poor performance of the industry. From 1989 – 2002, certain decline was observed in the performance of US construction industry (Larson, 1989) but in the meanwhile UK government focusses on the improvement of construction industry performance that fortitude in performance should

be considered as the necessary element for sustainable improvement. The only solution determined to bypass the current situation was to measure the performance. Due to its strategic role in the pursuit of success and sustained improvement, performance improvement and measurement became a fundamental part of the construction industry since then.

(Neely, 1999) Describes it as, To know the status of the company in the industry and what they had to improve for success and how to influence their subordinate's behaviour, it is necessary to measure the performance. After recognising the importance of performance measure a new field of research arises that which factors affect the performance like performance measure, key performance indicators KPIs, Success criteria, project management performance, performance drivers, critical success factors, company performance were added to the literature. Although these developments were in manufacture industry and detection of poor performance but it also gives the construction professionals and researchers a way to think about new concepts for performance improvement.

Traditionally project performance was the main focus, and the performance was assessed by time, cost and quality attained on the project (Ward, 1991). Even though with the help of these three measures we can identify success and failure, but project performance cannot be extracted. Their application in the project can only be visible at the end of the project and are also suborn by other aspects such as health and protection, employee satisfaction, efficiency and performance. As (Kagioglou, 2001) said, these three measures can only be classified as lagging other than leading indicators of performance.

Construction companies should know adequately their performance to survive and sustain competitiveness in the national and international market. However in other industries traditional approach of performance measure was defined as retrospective because they fail to asses to actual performance of construction projects and organisations (Kagioglou, 2001). Limited use of the long-term strategic planning in construction business was gained from such financial performance measurement system.

According to (Langford, 2001), by gaining value in general construction stakeholder satisfaction would lead companies to pose fresh challenges in strategy making process.

This shows that there is a need for broader performance management/measurement system concerns not only paying customer but also the stakeholders all being critical for short and long-term business viability. To form a competitive base, the results obtained from wider performance measurement process can be used as input to the strategic management process. This would be beneficial for the construction industry that has been criticized for lack of long-term strategic planning and management.

1.2. Justification of Research

Performance measurement has become an important topic around the world and also attracting great deal of concentration in both academic and industries. There is a necessity to develop and research on different aspects of measure and managing business performance perspectives as well as performance measurement system design in order to achieve goals in a successful manner (Beatham, 2003).

Basically the research problem can be specified as, changing in markets dimensions and increasing competition are forcing companies to explore and adopt a long-term decisions making strategy. A successful performance management system can be implemented by setting a comprehensive performance measurement system in this way organization can make appropriate strategic decisions in order to see their status in business environment. Therefore there is a lack of comprehensive performance measure system in the construction industry and because of the absence it is impossible to recognize the status of an organization. Moreover the traditional approach to find the future performance through the results form financial base performance measurements system can be diminished.

Performance measurement could be a bland term including quantitative premise by which goals are setup and performance is evaluated and determined. To appraise the success in accomplishing a specific goal it incorporates performance objectives and criteria, performance indicator and other implies. As part of business management performance management can deliver benefits and advantages to any practicing organization and also its use and execution are now common (Kulatunga, 2007). For better future business goals and rearrange in the business processes by assisting the manager and leaders in

a right direction is one of the biggest advantage of performance measurement system. It should be incorporated in the formulation and implementation phases of strategic development and can also be used in the evaluation process.

Due to competitive environment organizations need to improve their performance on regular basis to ensure that the goals are met, so it guides and leads the top management to formulate the strategy policy and helps to clear it down to the level of individual employee. In order to improve the overall business performance and understand interrelations between business-relevant aspects, one should also measure different performance factors i.e. employee motivation, sales revenue and service quality (Wettstein, 2002).

Corporate strateigical function of an organization is based on the performance measurement so it should have that capacity to implement in their business management system. Therefore it is necessary to have a comprehensive performance measure system that can measure both qualitative and qualitative aspects of the construction industry.

The capability of an organisation depends upon the previous performance because it in mainly the ability of an organisation to manufacture products and manage projects. The necessary levels of performance accomplished by an organisation is a very impressionistic matter. Three basic questions have to be considered to have a better understanding; what will be measured, how it will be measured and why it is measured (Santa, 2006). Performance measurement tools and models used in the organization needed to discuss in order to measure the financial and non-financial aspects.

This research will discuss about the tools and models that are being used in the performance measurement, but the primary emphasis will be on two models

- Balance Scorecard System (BSC).
- EFQM Excellence Model.

In order to measure the performance of an organisation this research focusses on how these tools and models are being used and how to identify the organizationally chosen key elements by using fundamental concepts. The assortment of EFQM excellence model is because the operators of this tool claim that it is one of the most suitable models as

well as also the most-used performance measurement model (Neely, 2000). Both BSC and EFQM excellence models can establish a specific framework for performance management system and help to create long-term performance strategies for an organisation (Wongrassamee, 2003).

1.3. Aims and Objectives

As traditionally the main focus was to measure the performance that include cost and schedule whereas the overall evaluation of the project is measured in a very less and unstructured manner within the construction industry. So one of the main targets of the thesis is to explore the potential tools and the framework for refining the performance measurement practice as well as the aspects that the managers and engineers need to know about in order to achieve efficient performance in construction projects. This thesis also comprises the study of various performance measurement approaches that can be adopted and also those are being used in existence to carry out the project successfully and smoothly. This thesis also proposed a methodology that quantifies the performance of project's main objectives in order to measure the overall performances.

Following are some of the main objectives of this research:

- Determine the concept of performance management/measurement.
- To which extent the established performance measurement tools and models are being used in a construction organisation.
- To explore the actual performance measurements along with the indicators that are used in construction organisations.
- A tool must be developed, in order to achieve performance measurement targets in construction organization.
- Lastly, the effectiveness of the tool in achieving the performance measurement targets should be evaluated.

The research also carried out the design tools and models of a comprehensive performance measurement system that can measure the performance on both project and corporate level. To achieve this performance measures as well as the performance

indicators will be determined. Furthermore, this system will help the professionals of the construction industry in assessing the status of their company, their performance in the ongoing project and also aims to create long-term strategies for their companies.

1.4. Limitations and Methodology

The key points of this research program and methodological approach along with the research activities and methods used to achieve them are presented in figure 1.1, which are as follow:

- Research credentials.
- A literature review on the topic.
- Research methodology.
- Current practices related to performance measurement.
- Development of framework
- Evaluation of framework.
- Analysis, conclusion and recommendations.

In the first phase, the concerned area of the research topic is to be identified through literature review. After that review is made to the specific area of performance management, construction management, performance measurement and business excellence. Within these are the primary focus will be on background, justification, aims and objectives, of research. The literature review of the research topic will be done, which covers the definitions and importance of performance measurement concepts, current tools and models as well as the relationship between performance management and measurement along with the strategic development of an organisation.

In the next phase study of research, the methodology is done. After that implementation of current practices used for performance measurement in an organization is obtained from different industry players of Pakistan. This data is then analyzed and framework will be formed by using the same data. In the second last phase, the framework is developed through the data obtained and literature review of the existing framework.

Second, the last phase comprises the evaluation of framework, and this is done through dialogues, questioners, telephone interviews and feedback form the organizations managerial level of the construction industry of Pakistan. The last phase of the research is to prepare the conclusions to sum up all the finding of the research and recommendations are made by those key finding. Which can help in improving the overall performance of administrations in the construction industry?

The process of data collections is the main reason for the limitation of research. Data were collected mainly from companies working in the construction industry of Pakistan. The scale of those companies is forming medium to large size. Most of the companies were working nationally, but some of have international working experience. So the availability of the measures was determined according to Pakistan's construction industry.

1. Research Credentials.

- Main focus is to identify background, justification, aims and objectives, of research.

2. Literature Review of Research Topic.

- Definitions and importance of performance measurement concepts, financial and non-financial aspects, tools and models / also performance managenet and strategic developmet relation

3. Methodology of Research.

- Literature review on methodology.

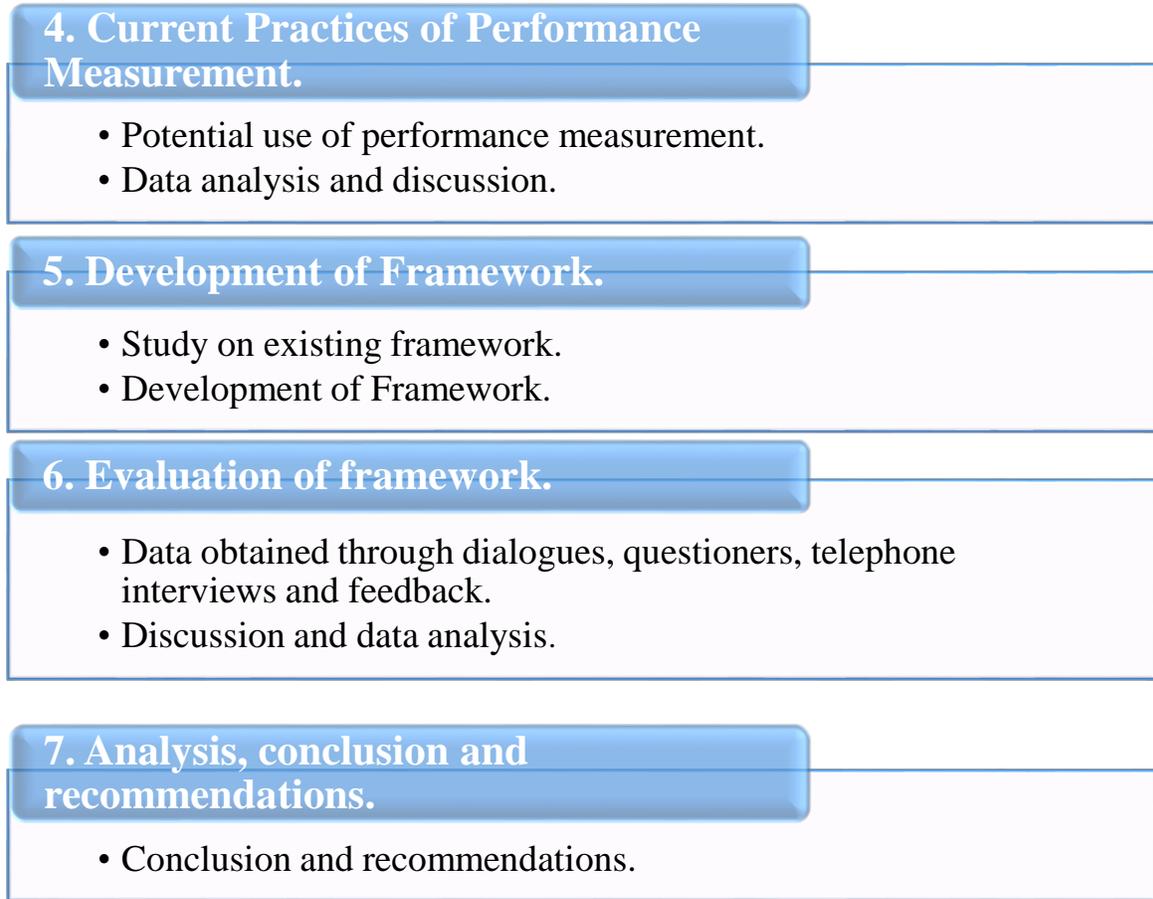


Figure 1. 1: Structure of Research

1.5. Structure of Thesis

The structure of this thesis is such as it comprises of entire seven chapters.

The first chapter is related to the introduction, background and justifications of the topic. It also comprises the aims and purposes along with limitations and methodological considerations.

The second chapter is related to the literature review of the performance management and measurement concepts and importance, tools and models that are in practice, financial and non-financial aspects and also the relationship between performance management with the long-term strategic policies of an organisation in the construction industry.

The third chapter includes the discussion of the approaches, data analysis and data collection methodology adopted for this research.

Forth chapter deals with the study of practices in performance measurement of organisations in the construction industry of Pakistan. It also explores trends in practising and implementation of performance measurements that mainly deals with the understanding, procedures as well as the assortment of tools, techniques and models used in performance measurement of the companies.

Fifth chapter reviews and presents the establishment of a useful framework needed for an organisation to improve the performance along with the central design, process, description, main features and content of it.

In the sixth chapter first of all evaluation approach of the framework is discussed along with the aims and objectives, which is then flowed by the process of evaluation. Then, later on, discussion continues with the results of the findings together with the elements, benefits, improvements and limitations of the framework.

The seventh chapter is the final chapter which elaborates the conclusion and recommendations of the research extracted from the data analysed.

CHAPTER 02

PERFORMANCE MANAGEMENT- GENERAL VIEW

2.1. Performance Management

Performance management is an incessant procedure that includes mounting of objectives and repeatedly examining the development towards accomplishing those goals. It also contains activities which certifies that organizational goals are constantly being met in an effective and efficient manner (V, 2013). Performance management's main objective is to make sure that organization and its sub-departments are working together in order to achieve the desired goals set by an organization. There are different variety of application of performance management i.e. performance measure, business performance, staff performance. As the main focus of performance management is achieve the desired goals by aligning all sub-systems, so it will also effect the management of overall performance of an organization.

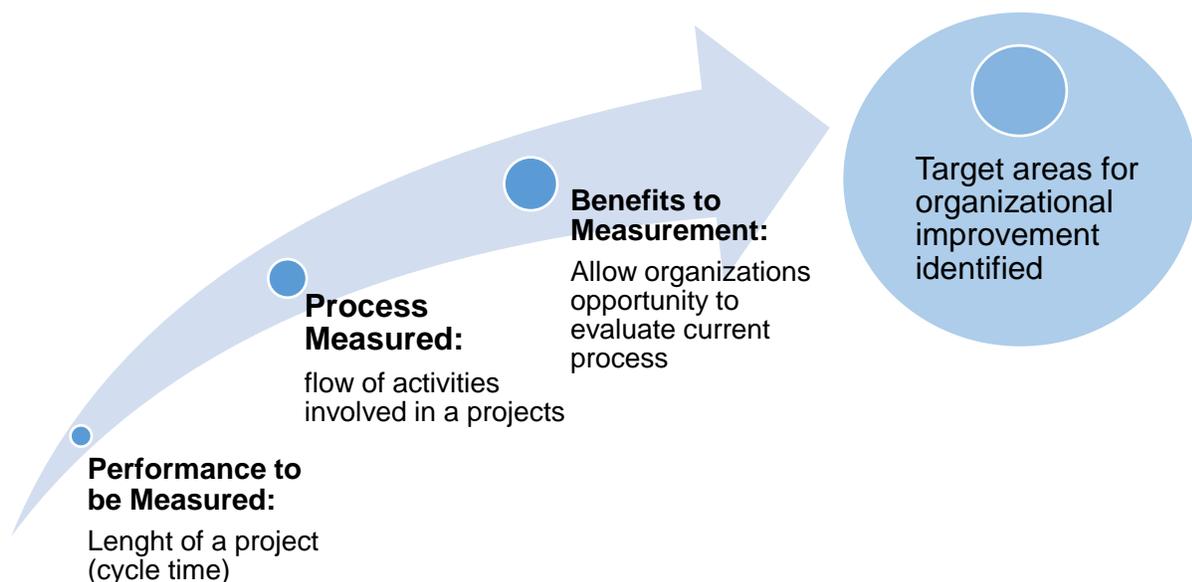


Figure 2. 1: Performance Management

Overall goal of effective management in performance of an organization can be achieved, by following the activities involved in the basic strategy of performance management system on regular bases. So basic strategies of performance management system are as below:

- Identification and prioritizing of desired results.
- To achieve desired goal, different methods are established to measure performance and progress.
- Mounting guidelines for evaluation in order to achieve good results.
- Pursuing as well as measuring performance towards goals.
- Bartering feedback among individuals working on achieving goals.
- Progress review on regular intervals of time.
- Reinforcement of those activities for achieving goals.
- Superseding to improve progress where needed.

2.2. Concept Related With Performance Management

Performance management is basically an ongoing process which established strategic performance policies and aims, measure's performance, analyse, review and report the data to improve the goals of an organisation. It is an approach through which efficiency and effectiveness of the planning, implementation and monitoring of an organisation, its internal units and staffs can be improved by assessing the past performance, level of goal attainments, emboldening and developing communication between employee and supervisors. Performance management also helps in identifying and achieving future goals and objectives by assisting employees, supervisors and other managerial staff using focusing on the strategic development and policies of an organisation.

Performance management process functions in a control system in which policies and approaches are made whereas analysis and feedbacks obtained from different levels help to manage the performance of an employee, organisation or business. As said by (Bititci, 1997), for the effective functioning of performance management system it is important to establish performance measurement system besides it is also considered as s soul of

performance management process. Therefore performance measurement is a parameter that helps in ascertaining how efficaciously an individual or organization have achieved the goals, objectives and strategies. It can also be described as a “systematic assignment of numbers” (Zairi, 1994). To take a step further, class of information can be engendered through developing a method is called a a function of measurement that can be used in solving a variety of problems and situations.

Assessment of employee contribution in the business strategy can also be called as performance, as defining the importance of performance it can be measure by developing a framework so that it could be measured by the same set of principles and rules (Kagioglou, 2001).

2.2.1 Performance Measures and Indicators

The performance measure is aspects of output that are used for evaluation purposes (Hronec, 1993). The performance measure is an integral part of the organization because through which it can be identified that how well the activities are organized in a process and how effectively the output are achieving their goals. This also helps us in collecting, computing and analyzing how well we are doing and how efficiently we are in the achievement of our objectives, whether our clientele are satisfice and is there any need for improvements.

The performance measure is a tool which enables us to define and set long-term strategies objectives and helps us in achieving them. It evaluates the effectiveness and efficiency of actions which is helpful in achieving the stakeholder’s satisfactions basically it is an incipient stage of an improvement which provide benefits to organisations (Samson, 2002). A performance measure can play an essential role in:

- Identifying opportunities for improvements.
- Ascertaining and pursuing progress against organisational aims.
- Compare both internal and external standard’s performance.
- Monitoring each individual and organization performance level by providing framework.

- Achieving requirements and satisfaction of customers and stakeholders.

Performance indicator can be defined as qualitative and quantitative characteristics of products, services, processes and procedures through which performance efficiency and achievements of an individual and organization can be assessed by comparing with the given standards. Moreover various perspectives of organization's performance can be determined from performance indicators and also for the adaptation of those perspectives, it is necessary to design such indicators which are directly related to it. Performance indicators also consider as a pivotal and fundamental element for an effective performance management system (Bititci, 1997).

SMART criteria can be used in the selection of performance indicators that means it should have a **S**pecific intent towards business, it should be **M**easurable to achieve the exact result, it should be **A**chievable, it should be **R**elevant to the accomplishments of association besides lastly its outcome should be **T**ime-phased (Kaplan, 2000).

2.2.2 Performance Measurement System and Framework

Performance measurement system is a system that is adapted and implemented by an organisation but the framework is a process its development is the basis for an organisation's performance measurement system (Bassioni, 2004).

Performance measurement empowers the organisation to think and implement improvements in their business through providing a mechanism which focuses on the wider aspects of business performance measures that acts as a driveway for successful performance management in an organisation. Sometimes due to market conditions, clients and other stakeholders organisations need changes and improvements, so it acts as a motivation for the implementation of performance measurement tools to gain momentum (Robinson, 2005).

Performance measurement system is a tool which creates a balance between different measures across different levels of processes, people or in an organisation. So it can also be called as a system which aims to assimilate different organisation activities and operations across different levels of management and function (McNair, 1990).

Performance measurement system and framework is the basic need for the performance management since it gives a way for accomplishment of both short-term and long-term objectives, goals and activities which are in-lined with the strategic development of an organization conjointly gives the opening for presistent improvements agreeing to the changing requirements of market necessities, clients and stakeholders gratifications. Basically principles should be taken into consideration while designing a performance measurement system which is (Maskell, 1989):

- Measures should be based on the strategy of an organisation.
- Measures vary according to the location and circumstances means different measures for different strategies and operations.
- Measures should be simple and easy to understand and use.
- Measures should be designed in such a way that it can provide fast feedback.
- The design of measure should not only monitors but also helps in continuous improvement of an organisation, process and people's performance.

2.3. Importance of Performance Measurement

During the last few years organisations comprehend and concedes the importance of measuring the performance of their business and there are several reason behind that (Neely, 1999). For gaining long-term competitiveness and effectiveness, measurement helps to realize and understand the business potentials. It provides great opportunities to find new ways for continuous monitoring and improvements of their performance due to change in market situations, increased competition, quality awards, power of information technology, changes in demand and other aspects. It provides much better understanding of organizations corporate strategy and vision moreover performance measurement warns companies throughout negative performance and influences opportunities because of substantial communication framework (Mbugua, 1999). A successful performance management system is a result of improved organisation configuration and employee performance/actions according to determined strategy and also provides continuous management changes and strategic planning according to the capabilities required and available in the organisation.

To move in a correct direction, to improve business goals, improves customer's satisfaction, to rearrange the business process, to increase productivity within an organisation performance measurement assists the managers for better future (Kulatunga, 2007). It is called as management improvement system and management control system (Bititci, 2004). The importance of performance measurement can also be understood by an expression "if you cannot measure it, you cannot manage it" (Niven, 2002). So incorporating performance measurement is considered as a fundamental element in the performance management of an organization.

Performance measurement also serves as business tool for managing human resources, formulating corporate strategy and assessing performance management moreover the results of measurement are consider as indicators which indicate the current achievements and also help in identifying the future required achievements. Performance measurement can improve different aspects such as finances, processes & persons in order to achieve success (Kulatunga, 2007). Apart from that it provides a monitoring mechanism and seems a significant approach for an organization in order to achieve success.

While developing goals and objectives it is necessary to keep in mind all the internal and external aspects of an organization. To ensure the evaluation of their own effectiveness and efficiency performance measurement should be a part of strategic development process. The measurement of current and past performance of an organization is an important issue because failure of organization in translating strategies into actions are due to weak performance measurement system which effect the organizational management in collecting the right information for monitoring process in achieving their strategic goals (Dalrymple, 2006). The main reason of measure the performance of an organization is to find out the level of excellence as compare to their competitors. Performance measurement characteristics are:

- To confirm what organization know or reveal, it helps organization to understand their own process.
- Ensures that decision made for improving the business are based on standards and facts by using measuring tools and models of performance measurement.

- Helps to identify organization performance in business by determining whether suppliers are fulfilling the requirements of an organization, which is a main purpose of performance measurement.
- Determines where improvements are needed either within a unit of organization, process, people or the whole organization.
- Show exactly what organizations have to do and how to manage if improvements are needed.

Although performance management is beneficial for an organization but it can effect and bring problems in case of its implementation failure and this can be because of absence of knowledge about the importance of performance measurement.

2.4. Performance Measurement Tools and Models

Performance measurement is a very immense field and from the last two decades many researches have added their work in the literature. Before only financial performance was measured and assessed but later people realizes that non-financial performance also plays a vital role in management, success and development of an organization. So we can say that the concept of performance measurement emerges from financial performance measurement. Since 1980's many models have been developed and coexisted because of their different approaches, strategic management scrutiny and reporting procedure (Lin, 2007) is a good example of that. In the early 1990's there is a great attention towards the incipient methods and techniques in order to manage as well as measure performance, so many researches try's to amalgamate the traditional financial measures with the non-financial measure as a result a more comprehensive and effective measurement tools, models and framework has developed. Such as BSC balance scorecard, performance prism (Neely, 2003) and also business excellence model (Marr, 2003). The balance scorecard of Kaplan and Norton was promoted as a strategic performance management system in 1996 because it can measure the performance through four perspectives.

Choosing an appropriate tools for performance measurement of an organization is a critical part and it is not easy. (Tangen, 2004) Stated that, a successful performance

measurement tool is basically a guidelines of how to measure performance, which helps an organization to plan, manage, perform and control its actions. The information extracted is to be relevant, accurate, provided in the right time and easy to assessable to a person who needed it. Furthermore not only having the bet asset is enough but organization should have staff and people who can accomplish and knob the performance measurement procedure and implement it in a well-organized manner (Barr, 2005). Organizations are encouraged through the use of performance measurement tools to focus on measuring a wide range of business performance related issues such as processes, people and product. Condition of an economy and regulation made by organization, stakeholders and client are some of the other factors that are needed to be considered while implementing.

2.4.1 Criteria of Selection

First of all performance should be measure in such a way that it is understandable to those whose performance is been evaluated, it should be a part of closed management loop, provide timely information as well as relevant and accurate feedback. Both long term and short term results considering financial and non-financial aspects of an organization (Tangen, 2004). It is a fact that not all the requirements will be met but it should be intended in such a way, that it can fulfill as much as requirements needed by an organizations.

Appropriate selection of performance measurement tool for an organization is not only that it should be process oriented but also fulfill two requirements needed for system (Kueng, 2000) which is necessary for an organization are:

- The system should focus not on the organization itself or its unit but on processes of an organization.
- Both qualitative and quantities aspects should be measure by a system while evaluating performance of an organization.

Considerations should be made on the capability and effectiveness of the tool to gain needed result while measuring the performance of an organization on both aspects also

plays an important part in appropriate selection of tool. British quality foundation (BQF) presents some questions which can be used as a selection criteria for choosing a suitable performance measurement tool. Those questions are as follow:

- What is the aim and scope of measurement process?
- What is the starting and end point of an activity?
- What are the required curbs to accomplish the procedure?
- What kind of paraphernalia and amenities are required to operate the approach?
- What kind of steps are needed for the process?
- Which guidelines are required to invigilate the approach as well as the performance of the process?

The method of selecting tool is basically the main purpose of doing the measurement which may vary from organization to organization. Furthermore there are some others matters that need to be considers while selecting which are, Consistency, time, frequency, cost of data collection and also the vulnerability to errors (Hall, 2006).

According to (Cocca, 2010) effective performance measurement tool can stay arranged into two classes that are performance measure characteristic as well as performance measurement design. Performance measure characteristic identifies the approach of an organization needed to be measured for performance measurement purpose. Performance measurement design shows the elements the must be taken into consideration while selecting an appropriate tool. Moreover selection can also be possible by focusing on system requirements means what should be measured and measure requirements means how it should be measured.

It is not easy to design such as tool which can be called as optimal tool for performance measurement and it also differ form case to case. The right selection of the tool will benefit the organization and show positive developments in setting the long-term strategies, recovering investments as soon as possible, and it gathers proper element of strategy, finance and operations. Furthermore it will provide timely and accurate feedback to people, results in appropriate improvements in performance of an organization (Barr, 2005).

So to sum-up, a good performance measurement system is that which provides the exact data in response of the queries what is essential for an organization in order to manage the performance successfully.

2.4.2 Existing Models and Tools

In late 1980s the concept of performance measurement established and the formation of tools and models are developed. Initially they were made to measure the non-financial measures but later organizations and researcher realizes the importance of lead indicators or non-financial aspects then these tools and models were modified and extended to new approaches (Nudurupati, 2007).

Basically two type of categories can be describe for these tools and models, one's that focus on the self-assessment and the other's focuses on helping management to measure and improve the business processes (Ritchie, 2000).

In current practices, many types of performance management systems (PMS) are being used like performance pyramid, International key quality award, Malcolm baldridge national quality award (MBNQA) (Ritchie, 2000), Performance management performance assessment model (PMPA) But here in this thesis research only the most widely used i.e. Balance scorecard (BSC) (Wongrassamee, 2003) and European foundation for quality management (EFQM) will be explained in detail.

S.NO	SELF-ASSESSMENT	FOR MANAGEMENT SUPPORT
1.	International key Quality Award.	Performance Pyramid.
2.	Malcolm baldridge national quality award (MBNQA).	Performance Management Performance Assessment Model (PMPA).
3.	European Foundation for Quality Management (EFQM)	Balance scorecard (BSC)

Table 2. 1: Existing Models and Tools

International Key Quality Award:

A number of national and international awards have been created in order to measure the improvements and achievements which an organization in business have accomplished. The criteria of qualifying in this award are such parameters that provides guidance for organizations towards improvements and initiatives which are needed in the construction industry, through the identification of key performance parameters and measures. Is also gives the motivation for maintaining that status of an organization to continuously working on the required aspects for improvements in their business.

Performance Pyramid:

Performance pyramid is also known as strategic measurement analysis and reporting technique (SMART). This method was developed on the basis on non-financial aspects and opposite to the traditional way of performance measurement such as efficiency, productivity and other financial aspects (Cross, 1988). The basic principle of this method is to combine the business process view with the business performance measurement. It was developed by keeping in mind the customer prospective linked with the organizational strategy, non-financial aspect along with the financial aspects (Olve, 1999). It is also helps in describing the objectives and approaches of the organizations to the lower level of the management and how measure can be performed and operate at different level of management in an organization.

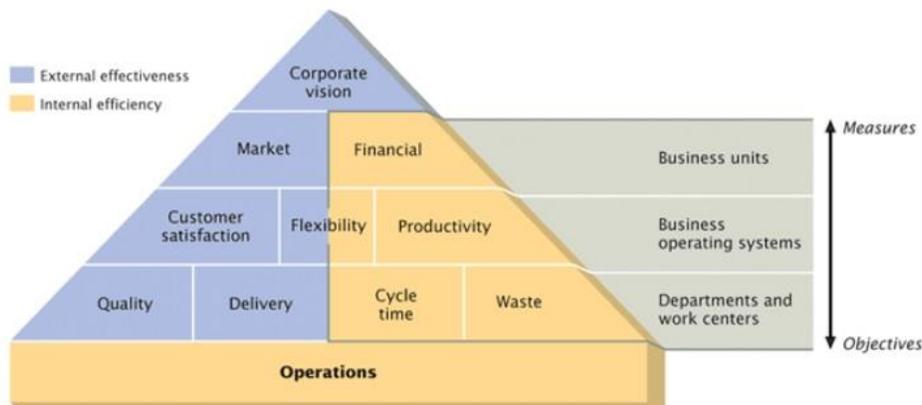


Figure 2. 2: Performance Pyramid (Kagioglou, 2001)

Performance pyramid comprises of four levels. Each level describes certain activities that help in achieving the required goals. In the first level the organizations describes how it will achieve long-term success and competitive advantages. On the second level the focus will be on achievement of critical success factors CSF in the mark-related measures and financial measures. Third level explains the guiding forces for each business operating systems that drive the strategic objectives of the organization. Forth level deals with the monitoring of driving forces that are delivery, waste, cycle time and quality. On the left side it explains the external, non-financial measurements and right side describes internal and financial aspects.

Malcolm Baldrige National Quality Award (MBNQA):

MBNQA is basically US based award which was created to improve the quality of western organizations so that they could compete with the Japanese contractors which attained the best quality (Lee, 2001). Japanese created the Deming Award to supervise the excellence of Japanese contractors (Williams, 2006). This MBNQA is based on the principles and methodology which is used in EFQM Excellence model (Williams, 2006). The criteria for this award is so high that some researchers and professional said that the most comprehensive and difficult list of actions required for good quality are enlisted in MBNQA.

This award consist of 07 principles which are based on critical success factors such as visionary leadership, management by facts, structural and individual learning, quickness, futuristic approach, handling of innovations, focus on results and creating value and also on system perspective (Lee, 2001). These seven criteria's are as below:

- Leadership.
- Customer and market focus.
- Strategic Planning.
- Business results.
- Human resource focus.
- Process management.

- Measurement, analysis and knowledge management.

Three criteria's such as strategic planning, Leadership, customer and market focus are needed to accentuate the prominence of management attention on approach and clientele. Human resource focus, business results and process management basically describes the results. In order to get the business results work of organizations are accomplished by the help of employee's and key processes. The last criteria is consider as the basis of performance management system because they are critical to effective management and improving performance and competitiveness of an organization.

Performance Management Performance Assessment Model (PMPA):

The framework for measuring the performance of project management is provided by using the PMPA model. This model originates form EFQM model which describes the total quality management in a comprehensive way. This model is based on two standard criteria's are enabling and results. Enabling criteria deals with the aspects of framework which are related to Leadership, people, strategy and approach, partnership and possessions as well as the life cycle management process of a project. Secondly in result criteria results basis on project, customer feedback, societal and people response are the aspects in key performance model which are being assessed. All these aspects both in enabling and resulting framework have positive impact on the project performance management (Bryde, 2003).

By the help of this model we can find out that, in case of low productivity which areas required high priority for performance enhancement in project management. Furthermore it also guide project managers in identifying the weak measure of the project which need to be stronger in the future through professional practice and approach along with further financing (Williams, 2006). This model can have significant importance in measuring and enhancing performance of project management and PMPA model is used as guideline which can help managers and organizations in the assessment and improvement processes.

European Foundation for Quality Management (EFQM):

EFQM model was made in 1988 and it is another popular measurement framework to measure the performance of an organization. Not only in Europe but also all over the world it is the most widely used framework for performance measurement. Basically it was developed by a European foundation based on practical experiences to improve as well as maintain the excellence of an organizations across Europe. This model is being used by thirty thousand companies all over Europe. This model is based on innovative principles of total quality management (TQM) used to invigorate and assist management of an organization (Watson, 2001).

The basis intention for developing this model is create a framework to ensure the quality improvement of an organization similar to that of MBNQA model in US and Deming prize in japan because of their contributions to increases the service and production qualities of an organization. EFQM model was initiated and applied to many private and public organizations of Europe. It includes the criteria that asses and ensure the quality related performance of an organization (Marrewijk, 2004). As this award is consider to be the national award for quality it gives awareness and provide a platform to share the quality management activities among the organizations. This model allows the organization to adopt innovative approaches, spread the developments of these approaches and also continuous improvement philosophy (Lee, 2001).

According to study in Scotland held in 2007, more than 80% of the organization uses this model for self-assessment, 65% and 40% used it for strategy formulation and visioning respectively and more than 35% of the companies used it for project and supplier management. This model can also works as predominant framework to achieve sustainable excellence because it can used in unification with other tools and methods depending upon the needs and function of an organization. This model also acts as a guiding tool for organization who wants to achieve and maintain success by improving their performance.

This model is based on the principle of total quality management (TQM) (Wongrassamee, 2003), which consists of nine criteria's and top management applies these criteria's in

order to assess the performance of an organization. This model allows the organization to understand the current position and by using these criteria's as benchmarks organizations can achieve continuous improvements. These nine can be divided in to two main categories called as Enablers and Results (Marrewijk, 2004). Enablers contain five criteria's and results consist of four criteria's. Criteria's in enablers and results are as below:

S.No	ENABLER'S	RESULT'S
1.	Leadership.	People Results
2.	Strategy.	Customer's Results.
3.	People.	Society Results.
4.	Partnerships and Resources.	Key Results.
5.	Processes, Products and Services	

Table 2. 2: European Foundation for Quality Management (EFQM)

Enablers criteria actually describes how the organization run's and operates while the result criteria deals with the what the organizations want to achieve and how this achievement can be measured and targeted. These two criteria's are interlinked in such a way that enablers helps to achieve results and results helps to improve enablers and this relation is basically the strength of this model. This models operates in a sense that excellent results are achieved by the feedback form people, customers, society and key results through effective leadership (Marrewijk, 2004). Each criteria is sub divided into two or five sub categories. Both scope and application of this model in total contain 32 sub criteria's. Each sub criteria deals with a specific area and these areas can be handled in parallel to each other.

The picture below describes how the mode operates. The nine boxes describes the criteria's against what the assessment of an organization is observed towards success. The model basically works form left to right and arrows show hoe different criteria's are linked together. Appropriate and improved results can be get through the help of innovation and learning (Marrewijk, 2004). This cycle repeats on regular interval of time

and requires participation of staff for continuous improvement of the process (Pyke, 2001).



Figure 2. 3: European Foundation for Quality Management (EFQM) (Bititci, 1997)

S.No	Criteria's	Sub-Criteria's
ENABLER'S		
1.	Leadership	<ul style="list-style-type: none"> a. Cultivate vision, mission, value & ethic and performance. b. Define, monitor, review and drive management system and performance. c. Involve with outer investors. d. Strengthen ethos with people. e. Certify flexibility to manage changes.
2.	Strategy.	<ul style="list-style-type: none"> a. Based on understanding and exceptions. b. Founded on internal enactment and abilities. c. Policies developed, reviewed & updated. d. Polices transferred, executed and supervised.

3.	People.	<ul style="list-style-type: none"> a. Sustenance organization's approach. b. Developed understanding and proficiencies. c. Associated, intricate and authorized. d. Effective communication. e. Remunerated, acknowledged & to be concerned for.
4.	Partnership and Resources.	<ul style="list-style-type: none"> a. For supportable benefits. b. Finance achieved for constant achievement. c. Manage paraphernalia, building, material and natural assets. d. Manage technology to deliver strategy. e. Information and knowledge management.
5.	Process, Products and Services	<ul style="list-style-type: none"> a. Manage to optimize stakeholder value. b. To produce best importance for clientele. c. Promoted and marketed effectively. d. Produced, managed and delivered. e. Manage and enhance customer relationships.
RESULT'S		
6.	People Results	<ul style="list-style-type: none"> a. Perception measure: Pride and fulfilment, leadership and management. b. Performance indicators: Internal communication, competency and management.
7.	Customer's Results.	<ul style="list-style-type: none"> a. Perception measure: Overall image, engagement and loyalty b. Performance indicators: Overall image, engagement and loyalty.
8.	Society Results.	<ul style="list-style-type: none"> a. Perception measure: Society impact, workplace impact. b. Performance indicators: Environmental performance, society performance.
9.	Key Results.	<ul style="list-style-type: none"> a. Perception measure: Financial outcomes, key performance b. Performance indicators: Financial performance indicators, key performance indicators.

Table 2. 3: Criteria's & Sub-Criteria's (Beatham, 2003)

The EFQM model is a performance measurement tool for identifying the performance of an organization. It also describes that what an organization need to improve, how the

profits can be increase and how success can be achieved in business. As this model used to assess and define continuous improvement of an organization, eight concepts serves as fundamental of excellence (Beatham, 2003) in this model which are as below:

- Leadership & constancy of purpose.
- Management by process and facts.
- People development and involvement.
- Continuous learning and improvement and innovation.
- Partnerships development.
- Corporate social responsibility.
- Result orientation.
- Customer focus.

Even though this model is renowned in the industry, it can also be used in operation and application processes but it also have strength and weakness. So the strength and weaknesses of EFQM model are in the figure below:

STRENGTHS

- Helps in defining and assessing continuous improvement of an organization.
- Relationship between enablers and results aspects gives forte to model.
- Non-perspective framework makes it flexible to adapt to any type, size and sector of organization.

WEAKNESSES

- In order to achieve effectiveness, self-assessment process needs to apply many times.
- Self-evaluation does not itself improve the organization- the need for subsequent improvements actions to do so, therefore, needs to go in search of benefits.

Figure 2. 4: Strengths & Weaknesses (EFQM)

Balanced Scorecard (BSC):

As only financial measures are not enough to measure the performance of an organization or business so BSC purposed different directions to measure the most deliberate managerial problems such as traditional financial measures and also non-financial aspects in order to improve the performance of an organization (Wongrassamee, 2003). BSC is the most commonly used tool to measure the performance of an organization in the industry. In 1990 a research was performed by many and the results of this research provides the idea of BSC (Mustine, 2007).

BSC was developed because of the dissatisfaction of the traditional way of measurement of performance. BSC allows to get an actual understanding of performance through improved management control system with respect to strategic goal of an organization. Moreover this tool helps to develop strategic goals and also acts as a communication tool. So we can say that it is one of the best tools for measuring the performance of an organization (Neely, 2000). In USA, it is basically the most famous and widely used tool to measure the performance. In Harvard business review this tool is cited as one of the best tool for management in the last 75 years. (Bassioni, 2004)

The traditional way to measurement was insufficient to measure the performance of an organization therefor in 1992 Harvard business school professor Robert Kaplan and the president of Renaissance Solution Company David Norton invented this tool in order to measure the performance through different aspects (Kaplan, 2000). BSC creates a balance between the result extracted measures and measures that initiative performance of an organization as well as between the leading and lagging indicators of performance. Basically the lagging measure is based on financial aspect and the leading measure is based on growth, customer perspective and internal business process (Kagioglou, 2001). By focusing only on the financial measure the leading measure are neglected so the measurement of performance in any organization is incomplete so the link between organization targets with respect to strategic objectives and aims are not clearly measure so the chances of improvement are very less. No single measure at that time was able to measure the performance with different aspects so needs for meeting these short comes provides a concept of BSC (Kaplan, 2000).

In other words main purpose of BSC is to interpret the strategic goals of an organization into performance measures through a strategic management system. Strategic implementation process can also be managed by this tool but patronage and obligation is required for the management team in order to achieve successful results (Kagioglou, 2001).

Balance Scorecard BSC is divided into four perspective. These perspectives basically help managers to see and analyze the overall performance of an organization in a more comprehensive and in-depth manner (Kaplan, 2000). Four perspectives are given below as:

- Financial.
- Customer.
- Internal Process.
- Learning and Growth.

The financial perspectives basically cover's the economic aims and allow executives to keep an eye on the economic success and stakeholder significance. The focus will be on the strategy for growth, profitability and risk reviewed form stakeholders perception.

The customer perspectives explains the costumer's concerns such as client fulfilment, along with artefact and services qualities. In this emphases will be on approach for generating significance and distinction as of perspectives of customers.

The internal process perspectives describes core effective aims and highlights the key procedures needed to bring the costumer approach. The consternation will be on premeditated primacies for several business procedures that produce customers & stakeholder fulfilment i.e. labor productivity, on-time delivery, quality and machine utilization.

The learning and growth perspectives cover strategy for continuous improvement and creating value and also the incorporeal drivers of future accomplishment i.e. human capital, organisational services, preparation hours, organisational philosophy, management, employee turnover, systems and databases.

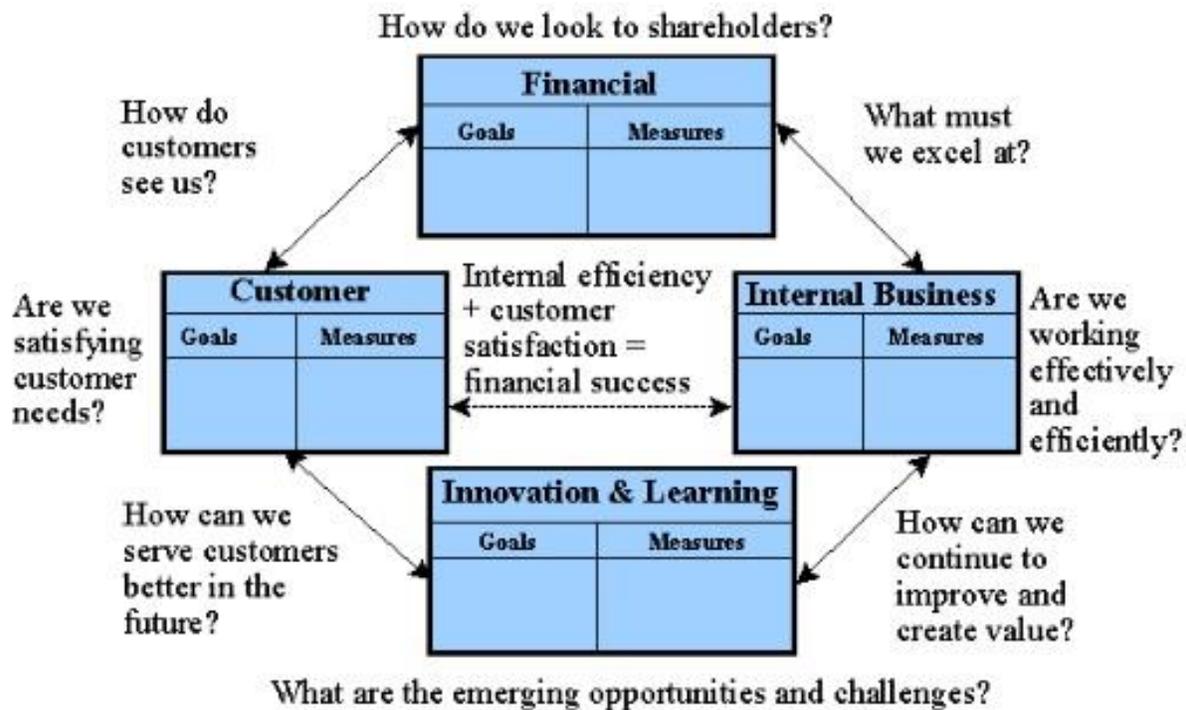


Figure 2. 5: Balance Scorecard (BSC) (Bititci, 1997)

Four perspectives of BSC are connected to the premeditated vision of the organization and measuring these perspectives also complement the traditional way of measuring the performance. Achievement of long-term and short-term goals are possible with the help of these four prospective and as well as to accomplish the strategic objectives and aims of an organization (Pienaar, 2000). The whole organization must understand the strategies of overall unites, divisions, departments in order to make BSC work more effective. BSC enhances the performance of an organization by developing the strategy plans, providing framework to improve work behavior and allows manager to measure their own performance which eventually improves the overall performance of an organization in order to achieve success (Kaplan, 2000).

BSC is basically a top-down approach in which executives should review and set the vision and top-level objectives. According to that information managers can make a strategy for an organization keeping in mind the futures goal that need to be achieved. The strategy should be defined in such a way that it has a clear demonstration for the

achievement of goals and objectives. It is a system of measure that helps an organization to achieve their goal according to the strategy. In order to enhance the performance the scorecard must be designed in the picture below:

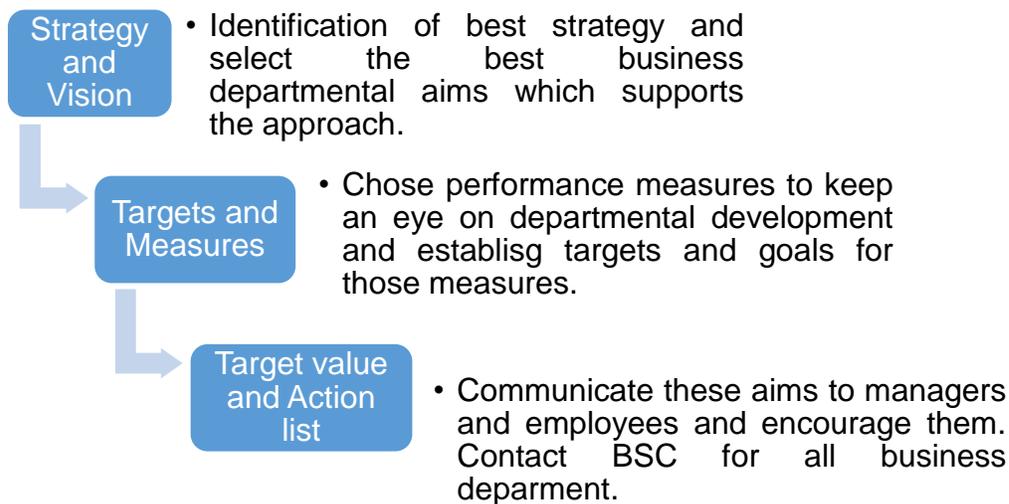


Figure 2. 6: Steps in Balance Scorecard (BSC)

Performance of an organization can be described on the basis of number of different measures through the BSC tool. BSC helps in achieving organization financial objective and customer's satisfactions by focusing on the strategy units of an organization rather than the business units. It looks on the business unit only if they have a positive impact. It basically bridges the gap between the strategic management system and the operational system of process execution through linking target measurable performance indicators with the target system of the company. BSC enhances the classical financial measure by additional measure concerning the effective performance and it is a balanced, comprehensive and focused measurement tool supporting business process monitoring (Kaplan, 2000).

BSC still faces criticism because of not providing complete performance measurement, as well as it doesn't include worker, provider and communal enactment in organization's

performance (Kagioglou, 2001), moreover the quantitative linkage between financial and non-financial results are missing but along with all this disparagement it ables to gets satisfactory provision from all the academic and industrial sector because it has a different approaches to measure the performance of an organization.

2.5. Performance Measurement in Construction

In construction industry performance measurement is implemented by most of the large organizations because it can help in improving the continuous performance of their business by optimizing the business processes, management procedures and product manufacturing (Khalfan, 2001). Management of performance is basically monitoring and controlling the performance of an organization (Ankrah, 2005) so it cannot be done if there is no measurement system so it is important for an organization to have measurement system that will help in managing the performance of organization to achieve success.

There are three basis reasons why measurement system is important, firstly because of the development and challenges in the construction project management, secondly there is a need to have proper tools and models in order to measure the performance because now a days construction projects are becoming more complex and lastly the development in performance measurement encourages construction industry to take interest in their performance measurement (Lin, 2007). It is also stated as one of the construction best practice goal is measurement because it acts as a catalyst in improvement and achievement of an organization.

The construction is Pakistan is headed by Pakistan Engineering Council (PEC). It is a government body which is responsible for the all the development, improvement and expansion in the field of construction. PEC deals with both government and public sectors of construction in Pakistan. Construction companies have to be registered with PEC in order to participate in a construction project and regarding their technical capabilities, economic eminence and previous performance record PEC classified them into different categories. PEC have developed a master plan and the objective is to focus on the strategic positioning and future directions of construction industry.

The main purpose for developing a strategic plan is because the performance and annual growth of construction industry in Pakistan is not satisfactory during the period of last 10 years. Construction industry is not performing at its best so in order to meet the challenges and global competition a master plan was needed to improve the overall performance of the industry. Therefore main purpose for a master plan is to establish a viable, proficient, innovative and efficient industry. So it will be accomplished by identifying the eight CSFs that will help in improving the performance of the industry (Chan, 2009).

Performance measurement is there for important to assess the achievement of the targets and plan according to master plan as well as organization can recognize their existing standing in both economical and non-economic facets in business (Hoque, 2004). So the eight critical success factors are given below as:

- Productivity.
- Quality.
- Human Resources.
- Knowledge.
- Innovation.
- Environmental-friendly Practice.
- Industry Sustainability.
- Professionalism.

Productivity deals with the incessant improvement from start of project till the last stage as facility management. It covers the whole process in the value chain.

Quality is another most important success factor which emphasizes on the adaption of excellent use of manpower, equipment, resources and techniques.

Human resource allows an organization to focus on creating a competent, experienced and professional workforce on the basis of skills, upgrading and knowledge as well as on the enhancement of their skills and abilities.

Knowledge augmentation is by sharing best practices and experiences to enhance the level of awareness and understanding within a construction industry.

Innovation allows organization to work on new inspired techniques, resources, apparatuses and paraphernalia through continuous research and development.

Environmental-friendly practice provides organization a framework in order to minimize the impact of construction on the environment and surrounding.

Industry sustainability encourages the organization to increase the opportunities and prospects at domestic as well as international level.

Professionalism helps in order to enhance the image of the industry.

Good eminence of financial, management, procedural and performance in the corresponding revelries determines the success level of an organization while carrying out construction project development activities (Takim, 2002). Construction basically involves the development of project so performance measurement focuses mostly on the project management of an organization in order to achieve a good result (Wegelius-Lehtonen, 2001).

In the late 1990's variety of new tools for performance measurement were introduced and implemented i.e. benchmarking method and Construction Industry Institute (CII) for performance purpose but the most widely used methods in performance measurement are BSC and EFQM excellence model because they provides proper guidelines to measure performance of an organization based on different aspects.

2.6. Deficiencies of Existing Frameworks and Recommendations

Performance measurement framework and methods are even though efficient and effective but in general it also have some shortcoming which can be explain as below:

- Determination of performance criteria and its interrelationships.
- There is a deficiency of coherent and systematic measurement design.
- In practice there is no guidelines for the implementations of performance measurement system.
- In long-term achievement of goals the adaption of framework according to change in environment. (Bassioni, 2004)

Deficiencies due to fear of punishment and the lack of visualization of their benefits are the major reasons found during the implementation of a performance measurement system. These deficiencies can be avoided by clearly communicating the objectives of a system as well as the benefits that can be obtained.

CHAPTER 03

RESEARCH METHODOLOGY

This thesis is basically a study of performance management in general and in construction in specific. This research is based on literature review made on performance management, definition and its concepts related to performance measurement, tools and models. Internet, journals, conference papers and books were used a source for this thesis work. In order to analyze data, current study using literature review is been done in order to gain information about the respected fields. This provides an opportunity to researcher to explore and analyze the topic in depth.

Collection of data through literature review helps in the development and understanding of a new framework. In the implementation of performance measurement this framework acts as a guidance for an organization. This framework is called as “Performance Measurement Migration Path”.

This framework basically provides a structure outline to instigate performance measurement procedure in which various level of individuals and procedures are involved. This method allow the organization to assimilate different steps and elements which has to be taken in consideration in order to achieve the required result.

This framework was then evaluated whether it can deliver effectual information and services to its users. This is done by analyzing the result of feedback obtained by creating questioners and spread to different professional in the field of construction industry. Below table demonstrate how objectives are achieved.

S.No	Activities	Data Collection		Data Analysis
		Literature Review	Questioner's	Content Analysis
1.	Performance Management and its Concepts Related to Measurement.	●		
2.	Current Studies of Performance Measurement Practices.	●		
3.	Framework Development For Implementing Performance Measurement	●		●
4.	Evaluation and Analysis of Framework.		●	●

Table 3. 1: Research Methodology

3.1. Literature Review

Literature review actually is an evaluation which provides summary, comparison, classification and evaluation of literature on a specific topic of interest. It is known that there are two main reasons for literature review (Saunders, 2007).

- In order to generate and refine ideas on a particular topic it act as initial search for research.
- It is an essential part of the research work.

It provides information and knowledge about the topic that enables the researcher to clear its mind and work precisely on the selected topic. It should be systematic, explicit towards synthesizing one report on a specific program produced by researcher after evaluating different work and studies (Fellows. R. and Liu, 2008).

In this thesis work literature review is done in detailed manner on performance management, its strategies and different impressions in a more general manner. Linkage between performance management and measurement, what are the methods & tools of performance measurement and its current practices and uses in the construction industry is reviewed and discussed in detail. Different objectives are presented in different

chapters i.e. first two objectives are discussed in the chapters 01 and 02 respectively. The data obtained for these objectives came from material on the Internet, books, journal articles and conference papers. This literature review will be continued till the end of the thesis research.

3.2. Current Studies of Performance Measurement

In order to develop a new framework as well as to accomplish aims, current studies of performance measurement is very important and critical, so that we can obtain and understand the current situation of performance measurement in an organization. This is done by literature review of current studies regarding performance measurement of two different countries UK and Pakistan. Current study basically helps us in identifying flaws and gap that will be supportive and used in an efficient development of new framework. Main source of this information is Internet, books, conference paper and journals. In order to comprehend as well as to ascertain the gaps and difference in the implementation of performance measurement, two different countries were preferred for current studies. Moreover it also helps in identifying the needs for practicing performance measurement in an organization of both countries. So in this relevance current studies is important for this thesis document. Additional information was congregated from organizational websites and reports referred by professionals.

Review is done in order to identify the current approaches of performance measurement, current tools and models as well as to classify connections between the strategy of an organization and performance measurement. Moreover it is also done to understand the advantages and disadvantages of application within an organization as well as the differences in implementation of performance measurement in two different countries. Lesson learned by comparison of performance measurement helps not only in the development of new framework but also in effective implementation. Developing a framework is important because it allows organizations to implement performance measurement in an organized manner. It shows elements and criteria needed for each step in order to run the implementation process easy and smooth for an organization. All the data obtained from review is then analyzed.

3.3. Framework Development for Implementing Performance Measurement

Data obtained from literature review on developing migration path is the basis for the development of framework for performance measurement. Apart from that characteristic models were used as reference for the development of framework that were generated in the industry. Capability Maturity Model (CMM) is used to derive the initial concept of new framework. Basically CMM was developed for implementation to present in the mechanizing of industry as well as to improve the software systems (Paulk, 1993).

Moreover other similar framework that has already been developed in the industry, used as reference in the framework development. BSC and EFQM excellence model was taken into account in the development of new framework and for detailing EFQM Excellence model principles are used.

As already mentioned before the main purpose for developing a framework was to assist an organization in the implementation and practicing of performance measurement in a systematic manner. Efficient framework as well as the implementation process are the basis in order to improve the performance of an organization.

The suitability, capability and ability of the framework are the basic criteria's that were recognized and considered to perform performance measurement by an organization in industry. Analysis on literature review of performance measurement is done to assess the success of an organization. Furthermore, whether key aspects has been fulfilled at each level in the framework because achievement of organization in implementation of performance measurement is indicated by it.

After the development of framework through literature review, evaluation of this framework will be done by analyzing the feedback obtained from questioner distributed to the different professional.

3.4. Evaluation Methodology of Framework Development

Evaluation is process of critical examination of research. It includes gathering and analyzing data related to the topic and the results from evaluation can help in improving

and refining the research as well as to make judgments about it. Evaluation are basically of two types (Patton, 2002):

- Formative.
- Summative.

Formative evaluation is used to strengthen and improved the object on which the evaluation is been done. In order to examine the effects and outcomes, summative evaluation is used and considered (Trochim, 2006).

In order to evaluate the efficiency of framework regarding its usability and capability summative evaluation technique is used in this research. The evaluation of proposed framework is done through analyzing feedback obtained for questioners. A set of questioner regarding evaluation was distributed to different professionals related to construction industry that are involved in performance measurement processes. Questioner were relate to content, efficiency and effectiveness, usage and capability of proposed framework.

Different organizations related to construction industry were involved in this evaluation about the proposed framework. Data regarding the new framework was provided erstwhile to the questioner. All the large organizations form construction industry commence performance measurement as procedures in the business.

The basis of selection of evaluators is mainly on their expertise, neutrality and experiences in the field construction performance measurement. This evaluation is made in order to seek recommendations and views on the effectiveness, content and usability as well as the implementation of proposed framework. After that conclusion, recommendation and suggestions will be made on the basis of data obtained for literature review and questioner.

The results obtained from this research will be helpful for making improvements in the field of performance measurement in an organization, which eventually helps in optimizing and enhancing the performance management of a construction projects.

CHAPTER 04

PERFORMANCE MEASUREMENT - CURRENT APPROACHES

This chapter will discuss about the current approaches and practices regarding the measurement of performance in the construction industry. This study includes the approaches of two countries UK (United Kingdom) and PAK (Pakistan). The focus will be on the process, tools and models use, and implementation as well as on how performance measurement interrelate with the strategy development. Moreover critical analysis will be made for the improvement of performance in measurement.

4.1. Implementation Overview

Many large organizations now a days are practicing performance measurement systems in construction industry. This is due to two reports which was commenced by UK Government recommends the importance and requirements of business performance of an organization in their successes as well as to emphasis on improving the business performance of an organization in construction industry. These reports are Latham Report in 1994 and the Egan Report in 1998. Organizations meanwhile, in UK become cognizant of the prominence of performance measurement in the success of business (Khalfan, 2001).

In Pakistan, now a day's performance measurement for industries even in construction is at its initial stages because it was introduced in 2017, now Pakistan is the first country in South Asia who implement the framework of performance measurement. Department of Auditor General of Pakistan (DAGP) was the first organization who implemented the performance measurement framework with the help of International Organization of Supreme Audit Institute (IOSAIs). After that many organizations even in construction industry in Pakistan became aware of the importance of performance measurement because enables the organizations to compete in an international world.

Many organizations still believe that performance measurement does not play any role in improving business and alleviate risk because of the absence of standards and guidelines for implementation of performance management in the industry. Therefore many organizations still hesitate to adapt the procedure of performance measurement for improvements except those who gained the benefits while implementation (Kundi, 2014). So from time to time many construction organization for the long-term, have and will implement performance measurement to improve and sustain their business.

As mentioned before the construction industry master plan (CIMP) by Pakistan engineering council (PEC) will improve the performance of organizations over the next coming years. The CIMP will focus on self-assessment and evaluation of the performance of an industry according to key performance indicators (Shahbaz, 2014). The aim of CIMP is to identify the factor of low productivity of an organization and to increase the overall performance of business regarding that image.

4.2. Performance Measurement Data Attained.

Data is collected from both the countries about the current approaches of performance measurement. A comprehensive approach is adapted to extract data through literature review in order to identify the current performance measure of both countries. Basically this literature review is done regarding the objectives of the research. The review does not only contain only systematic approach i.e. books, journals, research papers but also based on traditional snowballing technique in which articles containing performance measurement, methods and tools, construction productivity and relation between strategy development and performance measurement along with the articles they cited.

The basic intention was to know the current approaches of organization in two different countries as well as to analyze the gaps and deficiencies in the procedure and application of performance measurement to improve the performance management of an organization in construction industry.

Brief informant about the literature that was review regarding the current approaches of performance measurement of both countries Pakistan and UK are shown in table below:

S.No	Articles / Research Papers	Country	Authors
1.	Performance Measurement of Small and Medium Enterprises (SEMs) in Pakistan.	Pakistan	Mian Awais Shahbaz, Asifah Javed, Amina Dar.
2.	Key Performance Indicators In Construction Industry of Pakistan.	Pakistan	Muhannad Faheem A. Kundi, Wafa Unab
3.	Influence of Project Management Performance Indicators on Project Success in Construction Industry of Punjab Pakistan.	Pakistan	Junaid Aftab, Huma Sarwar, Hasiam Sarwar, Saif Ul Amin.
4.	An Investigation into the use of Performance Measurement Models in UK Construction Sector.	UK	Funso Otuyemi.
5.	Performance Measurement for Construction Business.	UK	Aryani Ahmad Latiffi.
6.	Performance Measurement Systems in Construction.	UK	Roshana Takim, Akintola Akintoye, John Kelly

Table 4. 1: Performance Measurement Data Attained

4.3. Objectives of Data

Data collection is important and essential to distinguish the existing standing of the practice within an organizations as well as in construction industry. This data is collected mainly from the literature review of six different resources that are given in table 4.1 along with other resources as well as keeping in mind the objectives of this research in order to remain focused regarding the topic. For this research data gathered is based on three of the objectives. Which are already mentions in chapter 1 are as follows:

- To understand and assess the effectiveness of performance measurement in current construction organizations.
- Tools and models of performance measurement that are being used by organizations.

- Identification of association among strategem growth and performance measurement.

According to the 1st objective current approaches of an organization regarding the performance measurement will be gathered and assessed as well as the effectiveness and efficiency of the processes used. It also covers the development of performance measurement practices by studying performance measurement methods and resources. Furthermore it includes criteria used for performance measurement along with the results of indicators used.

Second objective is related to the assortment of performance measurement tools and models used and also their categories. Purpose of this objective is to appraise the tool ad models that are used for performance measurement in the organization as well as to compare their effectiveness and efficiency in term of achieving both the long-term and short-term goals set by an organization.

Third objective is more related to the strategic role of the organization with the performance measurement and the possible improvements. It comprises the information about how the strategic development is connected to the performance measurement of an organization its relationship towards it. This part also contain the positive and negative impacts of performance measurement along with the hurdles facing regarding the implementation of performance measurement within an organizations. Moreover the improvements required to overcome these obstacles in order to perform a smooth and effective process to enhance the performance.

4.4. Overview of Data Obtained

Literature review is done in order to understand the current knowledge on performance measurement of both countries UK and Pakistan. Processes, Tools and models that are used as well as the difficulties facing during the implementation along with the approaches adapted to resolve the challenges faced. Data obtained on issues are deliberated in the subsequent segments.

4.4.1. Current Approaches of Performance Measurement in Organizations

The basic goal of current approaches is to recognize the acquaintance, assess and consideration of performance measurement of an organizations as well as its effectiveness. In general all the sources came to a conclusion that performance measurement basically improve the business and to capitalize on profit along with the improvements in process and overall business of an organization. Performance measurement is a technique and process thorough which performance can be enhanced (Beatham, 2003). Moreover it also increased the productivity and helps in decision making process as well as in detecting weaknesses which can be improved for betterment of the future (Kulatunga, 2007). Performance measurement plays an important role in providing useful information required in planning, operational and review phases in order to improve the organizational business.

Study also reveals that performance measurement have positive impact on the organization. It paved the way to maximize the opportunities and alleviate risks. Certain benefits in an organization are recognized based on the data and knowledge obtained are given as it helps in the identification of 1`sections that needs to be improved, improve productivity, necessary actions required to deliver a project in a successful manner, assist in performance management by managing resources, undertaking steps required for future improvements, improving the employee efficiency and effectiveness in delivering the tasks as well as enhance organization reputation in the market.

Review tells us that performance measurement also provide assistances in the procedure of generating and developing the approaches of an organization because of its involvement from the start. It is used as tool in the formulation of organizational strategies (Yu, 2007). It is also important to measure the performance and incorporate it in action plan, in order to know what your current status is and where you want to go. It does not matter how you measure it. It is also realized that resources should be allocated for implementing performance measurement in order to make sure that process runs smoothly.

In UK some companies have proper computerized system to support performance measurement activities within their accounts departments (Latiffi, 2012). In Pakistan few companies have a view that it is not important to allocate resource to performance measurement although organization is keen on the implementation of the process, it is the understanding and readiness of organization that needs to be considered for implementation (Kundi, 2014). Based on the literature review there are certain similarities in both countries upon the current approaches i.e. on the knowledge and understanding of performance measurement also that it has more benefits rather than negative impacts such as improving business, productivity and plans for future betterment. Apart for that they have different opinions on the allocations of resources some believe that people are important to use as resource for performance measurement.

According to literature review performance measurement in Pakistan is lagging behind as compare to UK, may be because of the recent introduction to this field. Most organization at one time were focused on expanding this business on the local market but recent introduction to performance measurement not only helps in improving their reputation in local market but also open door to gain access to global business. Currently performance measurement is becoming more important due to its significance in organization management along with the futuristic approach in order to improve the business not only for global as well as for local markets (Latiffi, 2012).

4.4.2. Performance Measurement Process

Information regarding performance measurement process is required to evaluate the processes that were used and implemented within an organizations. In both countries staff is consider to be involved in performance measurement process either direct or indirect manner. Directly means staff is involved in managing, measuring and evaluating performance of their organizations. But on the other hand indirectly means staff understands the application of performance measurement as well as commence their duties on their own for the achievement of what organization have planned. Commitment and cooperation is required from the staff and all other parties to implement the performance measurement process efficiently and successfully (Tangen, 2004). Process

basically helps managerial staff not only in the achievement of their tasks but also aligns them according to the organizations targets. Every year managerial staff sets the organizations targets that need to be achieved. In achievement of these targets every individual has its own objectives but main objectives come from chief executive team and flowed to everyone in this way individual objectives become aligned with the organizational targets and then seniors manager are the ones who have the responsibility to monitor these individual objectives to make sure that which are suitable for to achieve that targets.

Communication and reporting is also an important part of this process because necessary actions that are needed will be based on them. Performance measurement will be a complete waste of time if the measurement data is not communicated and useful for managerial staff (Franco, 2003). According to the study professional from both countries (UK and Pakistan) agrees that the performance measurement process should include even small groups and team level and divide through each level of management from top to bottom. Below diagram shows the hierarchy of management and their focus on criteria / aspects:

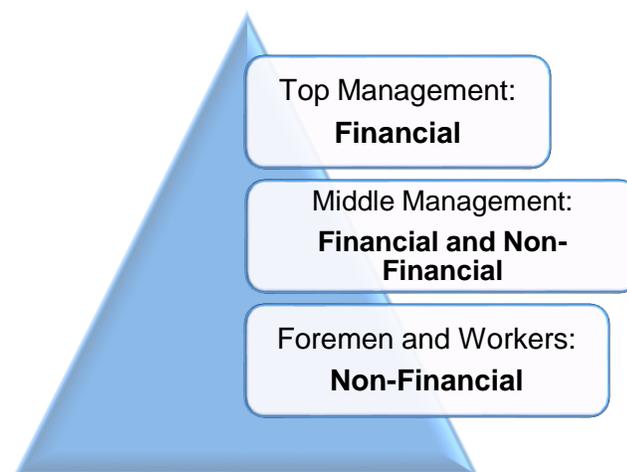


Figure 4. 1: Performance Measurement Process (*Express, 2004*)

In performance measurement both financial and non-financial facets are important and need to be measured (Wegelius-Lehtonen, 2001). In old times only financial aspects such as ROI, turnover, employee's sales etc. are used to be measured but now experts from both countries (UK and Pakistan) realize that non-financial such as management,

customer fulfilment and staff performance etc. are equally important. Moreover the selection of criteria is mainly base on the organization needs, aims and core business of an organization (Shahbaz, 2014). A balance have to be created between both aspects for a successful implementation of performance measurement process.

Indicators for performance measurement in an organization are different for both criteria's such as financial and non-financial. Generally indicator for financial aspect is money or currency but for non-financial two different indicators are used. Mostly number and time such as tasks for daily works etc. are used to measure the indicators. but some are with percentage like project completion (Wegelius-Lehtonen, 2001). Different indicators used depend upon what criteria is be measure and in which way the data can be mostly understood by the organizations representatives.

According to the literature review of performance measurement process, there is no difference in both countries (UK and Pakistan) that cooperation and commitment is required from the staff at each level of management in order to make the process successful. Executive member should set that targets and managerial staff such as senior managers should monitor the objectives as well as give instruction to the junior staff and report to the board of directors about the progress. Finally functional staff should perform their task in order to achieve the aims and targets in business. Apart for that, the selection of criteria depends upon the organizations objects and targets as well as the core business.

4.4.3. Relation among Performance Measurement and Strategy Development.

Professionals and experts from both countries (UK and Pakistan) believe that performance measurement is directly related to strategic development of organizations (Kundi, 2014) (Latiffi, 2012). There will be a need for performance measurement in all phases that organization has to go through such as strategic formulation, implementation of the process and even in evaluation. Basically performance measurement influences all the phases of strategic development of an organization which leads to a better

performance management of project or organization. It not only assists in creation of strategy but also support in the implementation of strategy. It is involved from planning stage of project to the implementation and till the last phase of evaluation along with the future improvement required in order to achieve success (Lehtinen, 2010).

The Performance Management Cycle

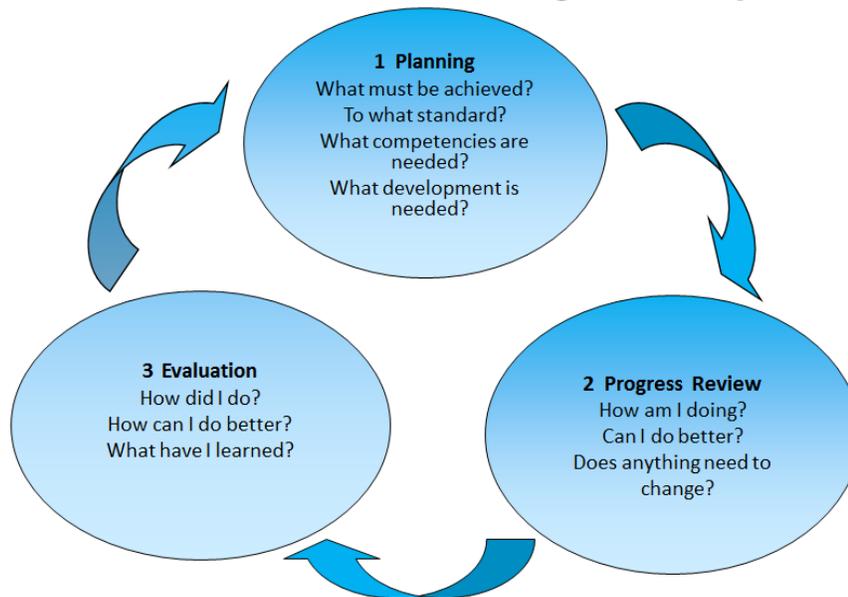


Figure 4. 2: Relation among Performance Measurement and Strategy Development.
(Bititci, 1997)

Most of the companies in UK believe that performance measurement should be aligned with the strategy development in order to achieve organizational mission and vision (Takim, 2003). Moreover experts in Pakistan realize that there is connection between these two. Basically gaining profit in the business is the main goal of developing a strategy whereas performance measurement assist that when, where and what kind of improvements are needed for an organization in order to develop a good strategy (Kundi, 2014).

Organizations from both countries knew that in order to improve in future and to identify the targets for the following years, it is necessary to measure the performance of and organization according to a specific criteria. The strategy of an organization needs to be reviewed annually but some professional prefer to make long-term strategy for more than

ten years in order to gain consistency in their performance (Latiffi, 2012). In spite of its importance some organizations in UK believe that there is no relationship between strategy development and performance measurement. Although they realize that it is needed for gathering information for the potential improvements in the business but it does not have any direct connection in the development of strategy (Latiffi, 2012).

Regardless of few official-domes, most of the organizations from both countries (UK and Pakistan) accept that performance measurement has a very strong influence on strategy development of an organization and it is considered to be a key indicator to achieve organizational aims, objectives and strategies for both long-term and short-term periods.

4.4.3. Challenges in Implementation

Literature review reveals that there are some barriers and challenges regarding the implementation of performance measurement in both countries. It is not easy to change people's mindset about performance measurement they consider it the most challenging part. Performance measurement can be easily overlooked by staff and sometimes activities are carried out without any interest and keenness (Latiffi, 2012). The main reason is people contemplate that hard work will be required by applying performance measurement. Moreover managers responsible for the evaluation of their performance have the power to undervalue it based on their interpersonal relationships therefore staff tries to defend and justify their performance except understanding how to accomplish that target. Due to lack of understanding most of the staff believes that it is another way of criticism that they have to face because everything can be revealed on individual level through the implementation of performance measurement.

Professionals from both countries realize that absence of cognizance about performance measurement is the main delinquent regarding measuring performance because employees do not give full commitment to it because they believe that this is not their responsibility. They see it as an additional work which is not included in their normal tasks. It is important to know the performance measurement process in depth and align it with

the organizational managerial practices who are new to performance measurement (Shahbaz, 2014).

Another challenge is that organizations are using many performance measurement systems that is a cause of difficulty for staff to perform it. Using numerous methods is like giving many tasks to workers and sometimes it become difficult to deliver best data to selected person in an appropriate way (Wettstein, 2002). Furthermore not every person can understand, use and assess every system so that makes their job more difficult. So systems that are familiar to most of the employees should be used in order to develop interest.

Apart from that one of the main challenges in implementation is unclearness of performance measurement because most of the employees are unable to identify what they have to measure and what will they get from these measures. It is easy for managers to understand but difficult for staff specially those who are new to performance measurement. One of the main difficulties in construction originations is the adequate identification and selection of performance measures that are related to strategies and critical processes (Ankrah, 2005). Although everyone believes that performance measurement is considered to be the main success indicator for performance management of an organization. Which helps in achieving aims, objectives and targets.

Literature review exposes that professionals from both countries (UK and Pakistan) reveals that changing people's perception and dealing with minds is not easy specially when they are not willing to change even for improvement because it will need more commitment from them along with the learning factors (Kundi, 2014) (Takim, 2003). Sometime change can be hard for people particularly for those who are new to performance measurement. Below figure reveals some of the barriers and challenges along with the approaches in implementation of performance measurement:

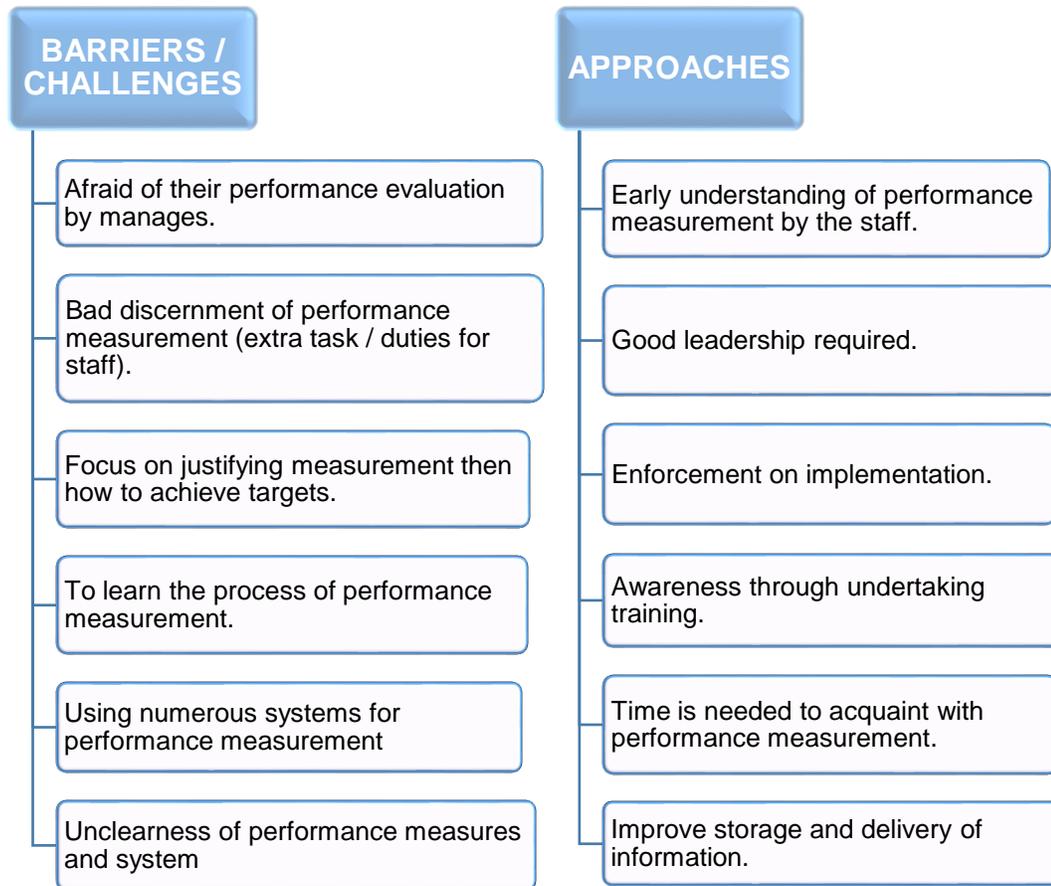


Figure 4. 3: Challenges in Implementation.

4.5. Key Findings

Performance measurement is essential for performance management because it allows an organization to know the abilities and weaknesses with in it and helps in improving and sustaining the business for long as well as short period of time. An appropriate selection of criteria and method effects the organization in achieving its aims, objectives and targets (Latiffi, 2012). Literature review of both countries shows the similarities and differences in the approaches and implementation of performance measurement.

Literature review shows that both countries (UK and Pakistan) realizes that importance of performance measurement in improving the performance management of the organization. They consider performance measurement as one of the main feat aspects to accomplish ideas, aims and goals set by an organization.

Senior employees such as executives and managers are directly or indirectly involved in the process of performance measurement (Takim, 2003). Furthermore, it is important for the staff and leaders that they should have the right knowledge and understanding about performance measurement in order to implement the process successfully. Experts also agree that performance should be measured in both aspects and criteria, such as financial and non-financial, to know the overall performance of their business for future developments. The selection of type and model should be based on the objectives and aims of the organization as long as they can measure things which an organization needs to measure. There are more advantages of performance measurement than disadvantages. It helps to enhance performance management in an organization by knowing the current status of their business and identifying the changes and improvements needed to achieve good reputation in the market. The key obstacle in the application of performance measurement is to modify people's attitude about it.

There are two main differences in the implementation of performance measurement that the organizations of both countries (UK and Pakistan) have are the period of application of performance measurement and the tools and models used for measurement. Organizations in the UK are familiar with this term since the 90s and after then they understood and implemented it as an important subject to view performance (Latiffi, 2012). In Pakistan, the situation is a bit different because of its recent introduction to this subject. It is still at its initial stages where most of the organizations believe it as an additional approach. So, lessons that can be learned from the UK market will assist in the improvement of their performance measurement. Identification of several elements and criteria's need to come together in order to execute performance measurement effectively and efficiently; those can be exemplified by the use of a hardheaded migration path which enables the organization to build capability rapidly. In order to achieve a better and desired position in the future from the current situation, the migration path acts as a guiding way.

CHAPTER 05

PERFORMANCE MEASUREMENT FRAMEWORK FOR IMPLEMENTATION

5.1 Framework Development

This chapter commences with the purpose of framework development followed by elements and key features of the framework (Migration Path) and ends with describing its functionality for users. Performance measurement framework is basically a strategic approach that can be used by any organization in order to improve the implementation of performance measurement and it can be called as Performance Measurement Migration Path. Framework is developed based on the literature review along with the data used in the previous chapter. Literature review reveals about the similarities and differences of performance measurement between two countries (UK and Pakistan). As discussed in the earlier chapter that UK organizations are practicing some advances in performance measurement as compare to Pakistan which was introduced to these measures recently. A lot can be learned from their experiences.

As many construction organizations in Pakistan are keen to use performance measurement to improve their business so encouragement should be given to those organizations in order to improve the overall performance of the construction industry in Pakistan. As performance measurement is a way to assess the performance and give benefits to an organizations, authorities like PEC and other governmental establishments should encourage organizations to adopt by making changes in construction regulation and requirements. Encouragement can also be done by giving information that what they can do to improve their performance. In order to make sure the excellence and increase profit in business performance measurement becomes a need to business management.

An appropriate guidance and assistance is needed in a proper manner by organizations to achieve success in performance measurement (Latiffi, 2012). As discussed in the previous chapter there is no need to build new tools for measurement because literature

review reveals that problems facing by most of the organizations in implementation process is sharing knowledge about performance measurement. Therefore solution to this problem is to develop an appropriate framework for information system that can be assessed by all parties within an organization so that everyone can extract the desired information from the system in order to understand the process.

The idea of developing a framework (Migration Path) within an organizations in Pakistan for the improvement of performance measurement process is the best way to lead them towards performance measurement implementation. Migration path basically guide and assist organizations about the steps needed for performance measurement process by showing the number of levels involved as well as the criteria needed at each level of implementation (Sousa, 2010). The basic idea of showing levels is to compare the current position with the desired status that need to be achieved in order to prosper implementation process of performance measurement.

5.2 Process

The framework is developed on the basis of literature review on the established tools that are already being used i.e. Performance Pyramid, PMPA, BSC and EFQM excellence model. The framework is developed by the amalgamating working processes of two different tools which are BSC and EFQM Excellence model (Latiffi, 2012). The literature review on current studies is done so that it became more relevant and can be used in the current situation. Key elements that are used in the development of this framework are the literature reviews on current approaches and established tools that are already in use. Later in this chapter the effectiveness and usability of this framework will be discussed.

The development of framework involves three steps (Latiffi, 2012) which are:

- Step # 01: Develop Maturity Model.
- Step # 02: Classify Critical Migration Path.
- Step # 03: Develop Appropriate Migration Path.

5.2.1 Step # 01: Develop Maturity Model:

Maturity model basically shows the progress in stages or levels towards the achievement of the goals of an organization (Lockamy III, 2004). Each level consist of set of established process goals, which is considers as an important component in the construction process. After achieving each level it will established a different component in the construction process, which will increase the capability of a process (Sarshar, 2000). The basic purpose of maturity model is that it will help to structure and organize the activities of performance measurement. Furthermore it will identify the current position of an organization in performance measurement process and guide to achieve the next level. The objectives of proposed maturity model are basically to classify the current status of performance measurement, secondly act as guidance system for an effective process and lastly allows organization to develop structured approach for implementation efforts (Latiffi, 2012). Below are the considerations that need to determine before the development of model:

- Criteria for implementing performance measurement.
- Number of levels needed for the model.
- Arrangement of the hierarchy of levels in the model, time needed to complete level as well as defining who is responsible for actions.
- Understanding the performance measurement concept should be the lowest level and awareness of expanding to other business units are the highest level.

Maturity Model:

The basic concept of this framework is derived from another model such as STEPS, which is formed and developed for construction industry works on the principles of CMM (Latiffi, 2012). STEPS basically represents five key elements such as **S**tart-up, **T**ake-off, **E**xpansion, **P**rogress and **S**ustainability. This model basically helps the organizations to structure and implement the performance measurement as well as provide guidance to enhance their performance management along with improving their business by achieving the business targets. The results and time needed to complete the model

depends upon the organizations and factors influences them are as level of awareness of performance measurement and the ability of an organization to conduct performance measurement along with the financial condition and system used for information by an organization. Maturity model for the framework is as follow:

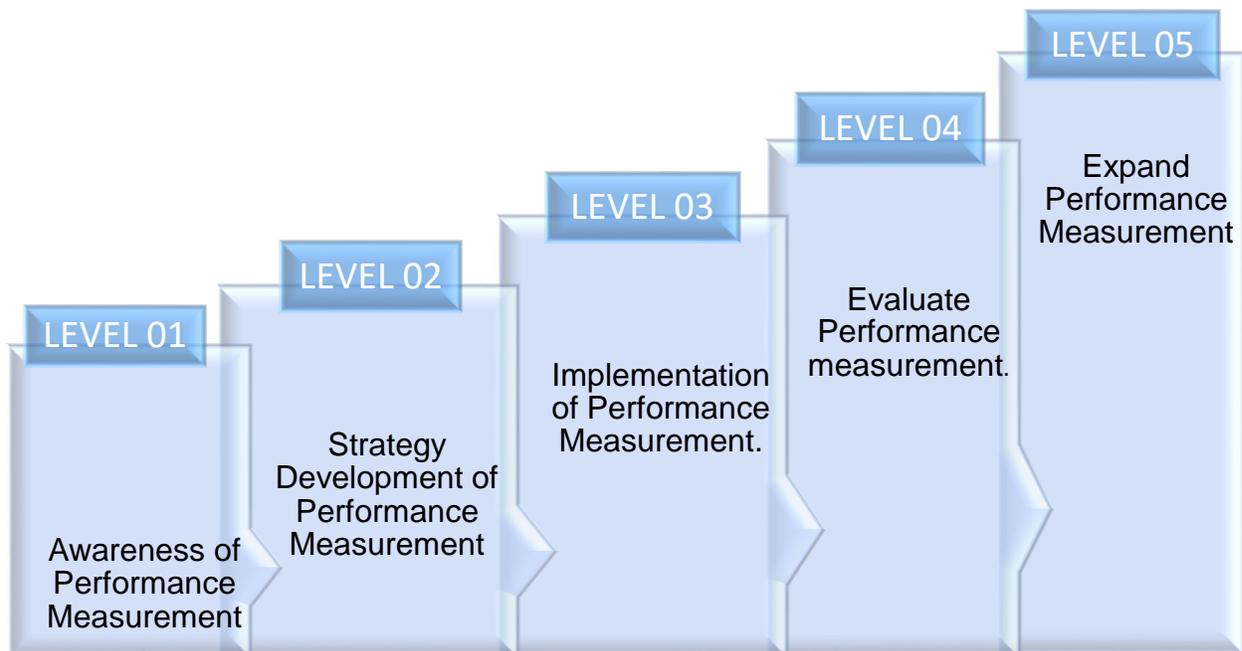


Figure 5. 1: Maturity Model (Bassioni, 2004)

The maturity model shown in figure 5.2 moves form level 01 to level 05 (Latiffi, 2012). Each level consists of different aspect and characteristics that need to be achieved in order to accomplish each level. It is important that no level will be missed or unattended in order to achieve the purpose of the model. The maturity level of an organization increases with the achievement of each level. Level 01 is the initial level shows the readiness of using performance measurement in their management and level 05 being the highest shows that organization are aware of expanding the performance measurement to other business units.

First level facilities the increase in awareness of the performance measurement implementation within an organization. At this level organization need to think about how the performance measurement can be practices and what benefits can be obtained from

implementing in an organization. In order to increase knowledge and interest for undertaking performance measurement leaders, staff and all other partners need to involve in the training. Training is a way to increase knowledge about performance measurement.

Second level focuses on the strategy development of performance measurement for the achievement of the organizations goals by understanding aims, and objectives for staff in order to know their responsibility. Understanding of targets is important for staff because it will bring smooth achievements towards the goals. Furthermore establish resources and refining business aims and objectives if the organizations is having problems in achieving targets.

Third level deals with the implementation of performance measurement and organization should make sure that all the parties should implement all strategies and plans made. In this level organizations must focus on establishing a support system to make the implementation easier as well as enhance cooperation and interaction between the managerial and functional staff during the process along with the identification of criteria that needs to be measured.

Fourth level emphasis on the evaluation of performance measurement by assessing the efficiency of measurement tools and models in order to identify ways to improve activities. Moreover identify actions to gather and evaluate results and those actions will be suitable in all aspects to an organization's capability. Refine performance measurement strategies to better achievement to organizations targets. Give remarks and record them for future references.

Fifth and the last level comprise of expansion of performance measurement to different business units and branches in order to increase the scale of performance measurement process. Staff and all other partners play an important role in organizations success and leaders will be responsible for increasing the performance measurement implementation in organizations.

5.2.2 Step # 02: Classify Critical Migration Path:

Migration path is basically develop to check and improve the level of maturity of an organization in respect of performance measurement. It helps the organization to proceed from current status to the desired situation in a step-by-step manner by defining path for them (Latiffi, 2012). According to their starting point it will recommend actions to proceed to the next level of maturity. This migration path is design on the basis of Cross-Sectional Learning in the Virtual Expertise (CLEVER) framework, used in the construction industry (Kamara, 2002). For the selection of knowledge management strategy according to the organization need and cultural requirements CLEVER framework delivers the results for any industry no matter at what stage of development the organization is at. It is basically a PC based knowledge management (KM) system developed through the detail study of knowledge management process in the sectors of construction and manufacturing (Express, 2004). The goal of CLEVER is to convert the vague KM problems into KM issues within business and helps the organization to identify possible and appropriate solutions (Kamara, 2002). The working process of this framework is divided into four stages from the identification of problem to the selection of appropriate KM process for the resolution of the problem. These four steps are shown in picture below as: appropriate

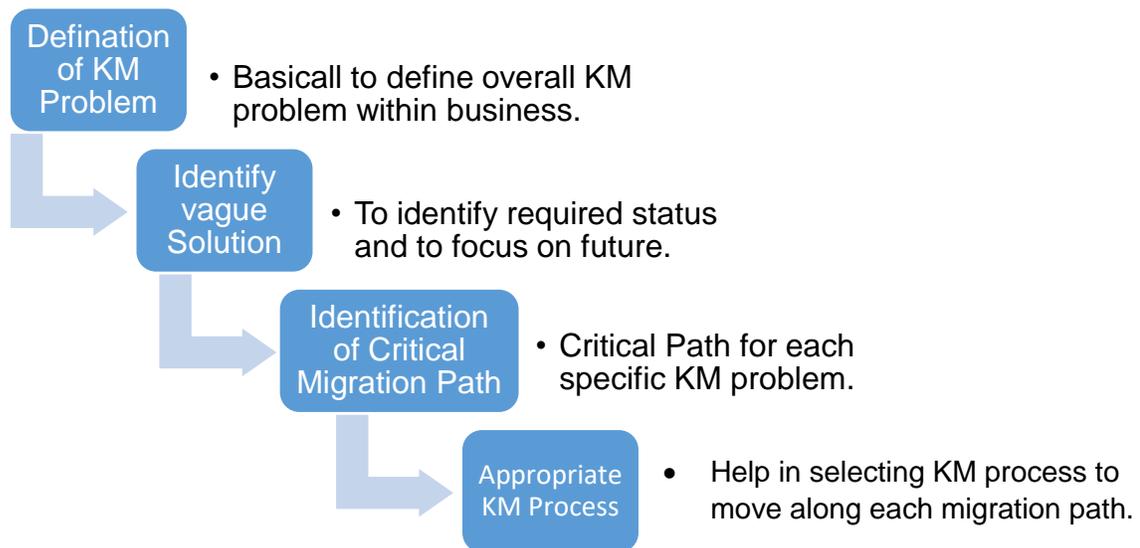


Figure 5. 2: Migration Path Steps

Before the development of migration path certain things need to be kept in mind i.e.in order to move from current situation to the better one certain criteria and norms need to

be identifies. Basically the criteria taken for this formwork is based on the nine criteria's form EFQM Excellence model. Secondly identify the current and desired situation of an organization. Moreover identify the migration path form the lowest level of maturity model to a highest level.

Criteria's for Migration Path:

In order to accomplish the procedure five of the criteria's from EFQM Excellence model are selected and used in the development of the migration path for the measurement of performance of an organization. These five selected criteria's are as leadership, strategy, people, partnerships and resources, and lastly processes, products and services, which represents "Enablers" and the balance are the "Results". Enablers are basically the actions related to how the organization is running (Marrewijk, 2004). Enablers are used to derive results based on feedback which in return helps to improve enablers. So the enables are important in the development of migration path for the performance measurement. All these five criteria's are based on both financial as well as non-financial aspects, which are need to show and measure the performance of an organization.

The failure and success in the implementation of performance measurement system is depending upon all the factors such as managerial, cultural aspects, contribution from all staff as well as best process (Barr, 2005) and strategy. Basically al the five selected factors are the representative elements. These factors need to be deal in such a way that the implementation process can run smoothly and achieve its desired purpose. The definitions of these five criteria's according to migration path are as follow (EFQM, 2009):

Leadership: The purpose of leadership is to develop a mission and vision, personally involved in the system to ensure the proper implementation of management system in the organization. Furthermore also develop strategy for long-term success and define appropriate action and behaviors.

Strategy: How relevant plans, policies, objective and process support the implementation of mission and vision of organization.

People: It includes organizational management, development and release of knowledge and potential of its people on individual and team based level as well as strategies and policies that help in the effective operation of its process.

Partnerships and Resources: How policies, strategies and effective operation of process are supported by organization through the management and planning of external partnerships as well as the internal resources.

Processes, Products and Services: How policies, strategies and effective operation of process are managed, design and improved by organization along with the environmental and social impacts.

5.2.3 Step # 03: Develop Appropriate Migration Path:

In this section the details regarding how this framework works, its content and functionality is discussed. In the development of Migration path the first procedure is to combine the Levels from first step with the criteria's (Enablers) from the second step and then finally the migration path is developed by fulfilling the need of each level according to the criteria's.

In order to fulfill the first step the combination of criteria's and levels are shown in the Table 5.1. Second row represents the five criteria's taken for EFQM Excellence model and the maturity of performance measurement implementation is represented by levels. To identify and starts from the current status and position for implementation the organization need to move from level one (L1) to another until it reach the highest level (L5). It is important that organization fulfill all criteria's according to its descriptions from level one (L1) before move to the next level. Furthermore each level need to be accomplish otherwise the process will not be productive for the implementation (Sarshar, 2000). All the levels of migration path are the same as discussed in section 5.2.1.

	Criteria's				
	Leadership	Strategy	People	Partnership and Resources	Processes, Products & Services
Level 1 (L1): Awareness of PM	Awareness of leaders about PM needs.	Organization awareness about PM strategy needs.	Awareness of staff about PM needs.	Partnerships are aware of PM needs.	Organization awareness about needs of PM processes.
Level 2 (L2): Strategy Development	Creation of task force by leaders to carryout PM.	Development of PM strategy by organization.	Knowledge development of PM by staff.	Development of measure to assess supply chain by organization.	Development of processes to undertake PM by organization.
Level 3: Implement PM	Leaders ensures PM activities are implemented.	Implementation of Pm strategy by organization	Implementation of Pm activities by staff.	Supply chain performance is measure by organization.	Systematic implementation of process.
Level 4: Evaluate PM	Evaluation of activities and identification of improvement by leaders.	PM strategy evaluation by organization.	Evaluation of staff performance in implementation and refine for improvements.	Partnership performance and resources evaluated and refine PM use in supply chain.	Quality evaluation of product and services by organization.
Level 5: Expand PM	Continuous expansion of PM to other unites and offices by leaders.	Implementation of Pm strategy to other unites and offices.	Continuous improvement of staff knowledge in PM and share to others.	Expansion of PM to other supply chain partners.	Expansion of PM process to other unites and offices.

Table 5. 1: Step # 03: Develop Appropriate Migration Path (*Latiffi, 2012*)

Migration Path:

The development of migration path and the decision regarding maturity level in order to accomplish each level is based on the current studies of construction industry of both countries done in the previous chapters. Data analyze and gathered is used to create and develop the details of migration path. Every movement form one level to next level is a form of guidance for an organizations to achieve the desire position and status (*Latiffi, 2012*). Below table 5.2 shows the migration path for each step that need to be fulfill in order to achieve the next level and provide towards the required status.

		Criteria's				
		Leadership	Strategy	People	Partnership and Resources	Processes, Products & Services
Level 1 (L1): Awareness of PM		Awareness of leaders about PM needs.	Organization awareness about PM strategy needs.	Awareness of staff about PM needs.	Partnerships are aware of PM needs.	Organization awareness about needs of PM processes.
Migration Path		Training related to PM undertaken by leaders.	Identification of current and future needs of PM by Organization.	Training related to PM undertaken by staff.	Training related to PM undertaken by partnerships.	PM process map develop by organization.
						
Level 2 (L2): Strategy Development		Creation of task force by leaders to carryout PM.	Development of PM strategy by organization.	Knowledge development of PM by staff.	Development of measure to assess supply chain by organization.	Development of processes to undertake PM by organization.
Migration Path		Leaders Provides resources to ensure PM activities.	Identification & Allocation of resources by organization needed to implement PM strategy.	PM activities undertaken by staff.	Partnership cooperation with organization in undertaking PM activities.	Support system provided to implement Pm by organization.
						
Level 3 (L3): Implement PM		Leaders ensures PM activities are implemented.	Implementation of Pm strategy by organization.	Implementation of Pm activities by staff.	Supply chain performance is measure by organization.	Systematic implementation of process.
Migration Path		Identification of evaluation format and results required by leaders.	Identification of success factors for PM by organization.	Staff competence in undertaking task assessed.	Identification of supply chain success factors by organization.	Checklist of procedures develop by organization.
						
Level 4 (L4): Evaluate PM		Evaluation of activities and identification of improvement by leaders.	PM strategy evaluation by organization.	Evaluation of staff performance in implementation and refine for improvements.	Partnership performance and resources evaluated and refine PM use in supply chain.	Quality evaluation of product and services by organization.
Migration Path		Knowledge sharing through communication	Transfer of knowledge to communicate	Staff ongoing training and	Knowledge transfer to communicate	Knowledge sharing through communication

	by leaders to others.	results to other unites and offices by organization.	development on PM.	results to partnerships.	to others by organization.
Level 5 (L5): Expand PM	Continuous expansion of PM to other unites and offices by leaders.	Implementation of Pm strategy to other unites and offices.	Continuous improvement of staff knowledge in PM and share to others.	Expansion of PM to other supply chain partners.	Expansion of PM process to other unites and offices.

Table 5. 2: Migration Path (Latiffi, 2012)

Leadership:

Leadership can be describe as process of influence. It not only influence the organization to ensure in the achievement of goals but also on others (Vroom, 2007). For leadership level one (L1) is the awareness of performance measurement needed and in order to achieve the next level (L2) training of leader is needed which helps in the achievement of their goals. On moving form level two (L2) development strategy is taken into consideration by the leaders. Accomplishment from L2 to L3 is done by providing resources to ensure that performance measurement activities can occurred as planned. L4 can be achieved by the identification of evaluation format to assess the performance measurement activities and leaders have to make sure that it is done on a proper manner. Before going to L5 which is to expand the performance measurement to others unites and offices leaders have to make sure that right knowledge is shared to proper communication for continuous improvement.

Strategy:

Strategy is considered to be an essential aspect in the achievement of success of an organization. It also guides the organization in the implementation of its mission and vision (Latiffi, 2012). To move from L1 to L2 in is necessary to identify the current and future implementation needs of an organization for the performance measurement so that it can be implemented smoothly and systematically. Achievement of L3 can be done thought the identification and allocation of resources needed to implement the identified performance measurement strategies and activities. To move from L3 to L4 is through

the evaluation of implemented performance measurement strategy and activities. The main focus of evaluation is to attain results that can be help full in the understanding of the probability of success factors in the achievement of strategy that are used in the implementation of performance measurement. The highest level L5 in performance measurement is achieve by transferring the knowledge to communicate results to other units and offices by organization.

People:

Employee and staff are the main resource of an organization in order to carry out the activities regarding implement the performance measurement. So in order to move from L1 to L2 it is important for staff and employees to undertake training which is essential to increase and strengthen their understanding of performance measurement. Level three L3 can be achieved by ensuring that all the staff involved in doing the performance measurement task have to undertake all the activities as planned or asked by the leaders. The success of these activities depend on the understanding of the performance measurement. To move from L3 to L4 the performance of the employees in delivering the task is assessed and evaluated in order to know that who is giving the best. The highest level L5 is accomplished through an ongoing training and development to improve their knowledge and share it to other employees through direct or indirect communication.

Partnerships and Resources:

Partnership is basically and inter-organizational relation to accomplish share goals with the other participants and resources is a set of assets and input required to run the organization (Lee, 2001). Movement from L1 toL2 required the training of all the partners through organizing seminars and works in order to improve the understanding about performance measurement. The migration from L2 to L3 is due to the cooperation of partners with the organization in undertaking the performance measurement activities. After that L4 is achieved through identifying the success factors for performance measurement. The main purpose for identification is that a set of standards can be

prepared in order to evaluate the performance or level of quality. At the highest level L5, knowledge is transfer to communicate the results in a direct or indirect manner to the potential and existing partners.

Processes, Product and Services:

Basically for the generation of product and services, processed is used and it is another standard that has to be taken into consideration in the creation of complete performance measurement process (Sampson, 2006). So to move from L1 to L2 organization have to develop the process map in order to facilitate the process. L3 is achieved when the organization provides the support system for the implementation of performance measurement which lead to the further development of product and services. L4 is achieved by making checklist of procedures to check the progress of work done. This is used as a guiding documents for checking and monitoring the processes, products and services. Effective knowledge sharing through direct and indirect communication by an organization helps in achieving the highest level as L5.

5.3 Framework Users

As mentioned earlier, in order to assist the implementation of performance measurement process in a structure manner, is the main objective of the framework. Its purpose is to operate activities and processes in a proper way from start till completion of the whole process successfully (Latiffi, 2012). The organizations having difficulties to complete the process will get the most benefit from it. This framework is used by mangers as well as functional staff for the evaluation, assessment and formulation of strategy to get benefit from it. Furthermore it provide assistance to the staff by guiding them in the identification of tasks and activities that are needed to be done during the implementation of the process.

This purposed framework can be introduced in the earlier stages of the performance measurement tasks and activities that are required to be accomplished by the staff. Five criteria's used in this framework not only measure the business of the organization as well

as it allows the organization to measure the performance of a specific projects. This framework can be used as a standard principle and guidance document for undertaking the performance measurement processes. Moreover this framework is useful for all kind of organizations in both countries who wants to improve their performance and business in local as well as in global market.

CHAPTER 06

EVALUATION OF PURPOSED FRAMEWORK

6.1 Evaluation Approach

Evaluation can be defined as a process of assessment of any operations, policy and program. Which is compared to a set of standards and principle in order to identify the improvements within the operations, policy and program (Powel, 2006). It is also used to provide useful feedback about the system, activity, objects and program. Evaluation can also be considered as a tool for imparting the effectiveness and efficiency of anything that exists (Fellows. R. and Liu, 2008). It is basically collecting and analyzing the data and then allows the researcher to provide observations and judgements about the validity of information irrespective of whether it is worth it or not. The main focus and goal of the evaluation is to provide useful observations and feedback to people for improvements. The purpose should be to influence the decision-making for the improvements driven from feedback and interpretations (Trochim, 2006). There are basically two types of evaluations;

1. **Formative Evaluation:** Formative evaluation is actually the judgements and observations made during the design and development of a program, policy and activity. Which is directed towards modifying, forming and improving the program and policy before it is completed (Patton, 2002).
2. **Summative Evaluation:** Summative evaluation refers to a method or judgement which is used to know and understand the worth of a program, system and policy at the end of the program activity (Patton, 2002). It is basically for summing up the judgement to make major decisions whether to continue or end the program.

The method used in this thesis work for the evaluation of framework is summative, in order to judge the effectiveness of the framework on its three main elements i.e. usability, content and capability. The main purpose of the evaluation is to identify whether it is effective enough to use in the construction industry for the implementation of performance measurement.

6.2 Aims and Objectives of Evaluation

The identification of critical migration path for each performance measurement criteria for the implementation in a systematic manner is the main purpose of designing performance measurement migration path framework. The main goal of the framework is to enhance and upsurge the business and performance of an organization from its current position to a better one. In order to accomplish the goal certain objectives are set for the evaluation of framework are:

- Assessment of the content, usability, effectiveness and capability of the framework.
- Identification of framework's strengths and weaknesses.
- For improvements obtained for feedback, review and recommendations.
- Exhortation for extensive and ubiquitous use of framework.

6.3 Process

The evaluation of the performance measurement migration path framework is already discussed in chapter 3 section 3.4 in detail. Functionality of the purposed framework, its content, effectiveness, capability, usability, errors and its target users are the main purposes of the evaluation. Furthermore to identify the competency of framework to perform successfully with in both large and small organizations of construction industry. The evaluators were give simple questions based on three parts i.e. background information, framework elements and general comments as well as encourage them to provide additional observations and recommendations for further improvement of the framework.

The scrutinize appraisal consist of different construction industry practitioners basically involved in the performance management and measurement processes of an organizations, in order to give strength and second approach about this thesis research. This kind of review for different professionals provide a standard to ensure the quality of the research. Below figure 6.1 express the framework of evaluation process. The

evaluation questioners are attached in Appendix A at the end of this report but the details of the questions and evaluation choice is discussed in later sections.

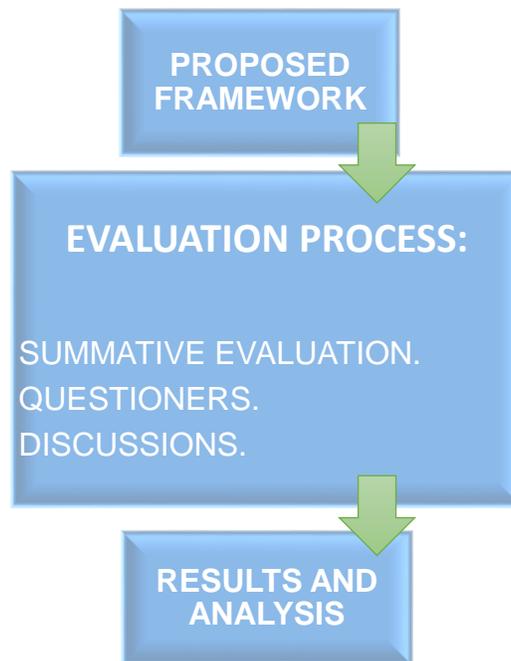


Figure 6. 1: Evaluation Process (Latiffi, 2012)

6.4. Questioner Design:

Questioner was designed for the evaluation of the proposed framework developed on the basis of aims and objective already discussed in the previous section 6.3. The main purpose is to obtain feedback form construction practitioners and attached in the Appendix A of this thesis research. The same questioner was dispersed to the evaluators. The questioner mainly consists of three parts:

1. Background Information.
2. Elements of Framework.
3. General Comments.

1. Background Information: This part of the questioner is related to information about evaluators. The request is about the name and position along with the job title and description also about the organization to whom related to i.e. name, address and type and lastly the contact details of evaluators.

2. Elements of Framework: In this part the evaluators requested to verify the need as well as the uselessness of the framework towards the organization. It is consist of four parts.

- a. Content.
- b. Capability of Framework.
- c. Effectiveness of Framework.
- d. Usability of Framework.

The main purpose is to obtained feedback about the understanding, adaptability and convenience of the proposed framework. Evaluator were asked to answer questions by selecting the given five options according to the best of their knowledge and understanding which actually show their assessment and observation with each statement. These five options are Strongly Disagree (SD), Disagree (D), Neutral (N), Agree (A) and Strongly Agree (SA). These option will be graded for 1 to 5, where 1 being SD and 5 being SA.

3. General Comments: Third and the last part of the questioner is to request regarding their suggestions, comments and recommendations basically includes about benefits, barriers and improvements of the framework.

Questioners allowed both quantitative and qualitative feedback as part 1 and 3 provides the qualitative feedback and part 2 provides quantitative feedback.

6.5 Results and Discussion

Data obtained from evaluation through questioners regarding the proposed performance measurement framework along with the results will be discussed in this section as below

6.5.1 Background:

To meet the aim and objective of evaluation for this study people from different fields of construction industry were selected from different resources. Especially people who are involved in the performance measurement and management fields of construction in

Pakistan. For the evaluation 18 organizations and practitioners related to performance measurement were included in this survey. The questioners were distributed via email. All of these participants have more than 5 years of experience in their respective fields.

The questioners was sent to different representatives of the companies with different field of work i.e. construction, consultants, management firms, designers and managers etc. All in all 8 organizations were “construction companies”, 4 were “designers and consultants” and 3 were related to “management firms” moreover 3 were involved in “civil and structure” organization. The selection of these companies and professionals were based on their experiences and involvement in the performance management and measurement fields. It is also important to mention that the results of this study is limited to the respondent’s point of view and observations.

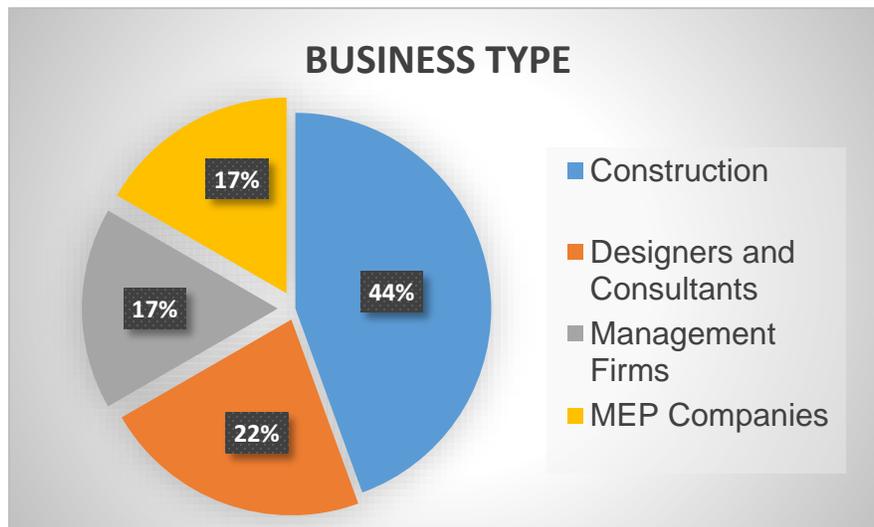


Figure 6. 2: Business Type

S. No	Business Type	Location	No. of Organizations	Data Collection Method
1.	Construction	Pak	08	Discussion & Questioner
2.	Design and Consultants	Pak	04	Discussion & Questioner
3.	Management Firms	Pak	03	Discussion & Questioner
4.	Civil & Structure Consultants	Pak	03	Questioner

Table 6. 1: Background

6.5.2 Framework Elements:

The result and responses from participants about all four elements will be discussed in this section in detail manner.

Content:

The first part is about the content of framework. The general consensus of all the participants about question 1 of this part is that the words and terms used in this framework is easy to understand and use because the response obtained for all the evaluators is **SA** (strongly agree). About question 2 most of them **SA** (strongly agree) and **A** (agree) that for implementation of framework the words and terms used are important except two companies, one from construction business and second is from civil and structure company both **D** (disagrees) with the statement that explanation for the implementation is ok but the terms are sometimes confusing because other meaning can be extract from these terms such as "PM". Results regarding the format of framework is 18 out of 12 companies **SA** (strongly agree) with the statement but 4 of the construction organizations **A** (agrees) with the statement and 2 of the designers and consultant companies neutralized the statement by selecting the **N** (neutral) option.

As most of the evaluation results are agree and strongly agree to question related to content so we can believe that the stability of the framework's content in terms of words and terms can be put into practice with in an organizations. Below table shows the summarize picture of results about the content obtained from evaluation.

Question 1 (Content)			Selected Options / Out of				
S.No	Business type	No of evaluators	SD	D	N	A	SA
1.	Construction	08					08
2.	Design and Consultants	04					04
3.	Management Firms	03					03
4.	Civil & Structure Consultants	03					03

Question 2 (Content)							
S.No	Business type	No of evaluators	SD	D	N	A	SA
1.	Construction	08		01		02	05
2.	Design and Consultants	04				01	03
3.	Management Firms	03					03
4.	Civil & Structure Consultants	03		01			02
Question 3 (Content)							
S.No	Business type	No of evaluators	SD	D	N	A	SA
1.	Construction	08				04	04
2.	Design and Consultants	04			02		03
3.	Management Firms	03					03
4.	Civil & Structure Consultants	03					03

Table 6. 2: Content

Capability of Framework:

In this part evaluators were asked about the capability of framework and a total of 4 questions were prepared. About question 1 most of the companies agreed to the statement i.e. 18 out of 13 respond that the framework can improve the implementation of performance measurement by identifying the maturity of performance measurement activities. 4 of the companies chose **SA** (strongly agree) and one management firm disagrees (**D**) with the statement because that believe that identifying the maturity level is not enough it has to start with the willingness and preparation of the staff involved. For question 2 every organization agrees (**A**) with the statement that framework is providing solution in terms of improving the performance measurement activities. Furthermore about question 3, 9 companies select **A** (agree) and 7 chose **N** (neutral) but 2 companies disagree (**D**) with the statement because according to most of them time will tell whether it will be helpful in improving the communication and corporate culture of the organization. The evaluators are not sure that only corporate culture and communication can be improved by the use of this framework because other factors should also be considered. Moreover most of the evaluators agree (**A**) about question 4 they consider that this framework is capable of achieving the performance measurement targets. So lastly

results shows us that most of the evaluators agrees (**A**) about the capability of framework. Below table shows the detail analysis of response from all participants.

Question 1 (Capability)			Selected Options / Out of				
S.No	Business type	No of evaluators	SD	D	N	A	SA
1.	Construction	08				06	02
2.	Design and Consultants	04				04	
3.	Management Firms	03		01		01	01
4.	Civil & Structure Consultants	03				02	01
Question 2 (Capability)							
S.No	Business type	No of evaluators	SD	D	N	A	SA
1.	Construction	08				07	01
2.	Design and Consultants	04				04	
3.	Management Firms	03				03	
4.	Civil & Structure Consultants	03				02	01
Question 3 (Capability)							
S.No	Business type	No of evaluators	SD	D	N	A	SA
1.	Construction	08		01	03	04	
2.	Design and Consultants	04			01	03	
3.	Management Firms	03		01	02		
4.	Civil & Structure Consultants	03			01	02	
Question 4 (Capability)							
S.No	Business type	No of evaluators	SD	D	N	A	SA
1.	Construction	08				08	
2.	Design and Consultants	04				04	
3.	Management Firms	03				02	01
4.	Civil & Structure Consultants	03				03	

Table 6. 3: Capability of framework

Effectiveness of Framework:

The overall rating about this part of the questioner shows that in the assisting the performance measurement process is considered effective. Total three questions were prepared for this part. About question 1 most of the companies agrees (**A**) with the statement by choosing **A** (agree) and **SA** (strongly agree) but only one of the civil and construction company select **N** (neutral) because they think that performance measurement practice improvement does not only depend upon the method other factors should be taken into consideration such as internal motivation etc. It seems that improving and understanding of the implementation process as well as the in assistance of employees this frame work is effective. 16 companies' select agree (**A**) and only one of the designers and consultant companies strongly agrees (**SA**) but one of the management firms choses **D** (disagree) because for some employees it is difficult to understand the framework so it is hard for them to improve without knowing and understanding. For question 3, 10 out of 18 companies agrees (**A**) with the given statement. 6 organizations select **SA** (strongly agree) and 2 of them remain neutral (**N**) about the effectiveness of the framework in the identification of fundamentals elements of management within an organization. The selection is that not all elements are suitable for all kind of organization.

Question 1 (Effectiveness)			Selected Options / Out of				
S.No	Business type	No of evaluators	SD	D	N	A	SA
1.	Construction	08				07	01
2.	Design and Consultants	04				03	01
3.	Management Firms	03				03	
4.	Civil & Structure Consultants	03			01	01	01
Question 2 (Effectiveness)							
S.No	Business type	No of evaluators	SD	D	N	A	SA
1.	Construction	08				08	
2.	Design and Consultants	04				03	01
3.	Management Firms	03		01		02	

4.	Civil & Structure Consultants	03				03	
Question 3 (Effectiveness)							
S.No	Business type	No of evaluators	SD	D	N	A	SA
1.	Construction	08			01	04	03
2.	Design and Consultants	04			01	03	
3.	Management Firms	03				02	01
4.	Civil & Structure Consultants	03				01	02

Table 6. 4: Effectiveness of framework

Usability of Framework:

According to the results of evaluation obtained most of the participants assess the usability of the framework as agree (**A**) and neutral (**N**). For question 1, 11 out of 18 companies agree (**A**) with the statement that the framework is simple and user-friendly but 5 company's remains neutral (**N**) and only 2 firms disagree (**D**) with the statement because some of the experience participants believe that framework with the maturity level and migration path become difficult to understand for some employees. Question 2 responses shows that framework also helps in guiding the organization in performance measurement process. Because most of the participants agree (**A**) with the statement by choosing **A** (agree) and **SA** (strongly agree). Furthermore for question 3, 15 out of 18 companies think that training is important and required for effective use of framework but 2 of the construction companies select **N** (neutral) along with one disagreement (**D**) with the statement.

Question 1 (Usability)			Selected Options / Out of				
S.No	Business type	No of evaluators	SD	D	N	A	SA
1.	Construction	08		01	02	05	
2.	Design and Consultants	04			01	02	01
3.	Management Firms	03		01		02	
4.	Civil & Structure Consultants	03			02		01

Question 2 (Usability)							
S.No	Business type	No of evaluators	SD	D	N	A	SA
1.	Construction	08				06	02
2.	Design and Consultants	04				02	02
3.	Management Firms	03				02	01
4.	Civil & Structure Consultants	03				03	
Question 3 (Usability)							
S.No	Business type	No of evaluators	SD	D	N	A	SA
1.	Construction	08				05	03
2.	Design and Consultants	04			01	02	01
3.	Management Firms	03		01		01	01
4.	Civil & Structure Consultants	03			01		02

Table 6. 5: Usability of framework

6.5.3 Benefits of Framework:

Following are the benefits of the proposed framework from the information and feedback obtained from professionals regarding the evaluation of the framework through questioners:

The framework, Performance measurement migration path guides and assist the organization in the performance measurement process in a systematic and organized manner. It is basically a route map for an organization which identifies the current position, past achieved status and also future position that have to be achieved as well as makes it easy to use and follow the process.

The framework describes different stages of performance measurement for an organization in the measurement process by identifying the current position and what it will be in the next level. It also provide the necessary guidelines for an organization in order to implement the performance measurement process.

It does not stick only with the performance analysis else it allows organization to stop and think about its current position in order to make improvements for future. This framework also helps in strategic management by providing guidance for evaluating process of strategy in management.

The framework helps organization to make plans for future improvements by indicating different levels and providing checklist at each level that needed to be done. And how. Moreover framework also supports in the strategic development by providing guidance in describing and identifying their performance requirements and targets.

The framework provides benefits to the employees and staff which are directly involved in the performance measurement activities and processes. For example managerial staff will get more benefit as compared to functional staff because of their involvement from the initial stage of strategy development till the final stage of achievement. For other employees it is difficult to manage the framework.

This framework basically helps all types of organization who wants to improve their performance especially for those who are new to performance measurement and looking for a method to strengthen the use. According to the evaluation results it is observed that this framework is easy to use and understand not only for managerial staff but also for functional staff as well.

6.5.4 Barriers to Use of Framework:

There are certain barriers for the use of proposed framework that has been indicated by the evaluators as well as observed during the evaluation process which are as follow:

The use of proposed framework are more beneficial for the owners and leaders as compared to the other staff or employees due to its complexity. Sometimes it is difficult to understand and use this framework if the staff or employees are not involved in the performance measurement process.

Evaluators believe that the proposed framework is another tool to measure performance just similar to the other tools and models of performance measurement. They think that

its implementation is a kind of burden on the organization because they have to learn and know it before use.

Some evaluators believe for the achievement of strategic targets it does not translate into specific action that an organization need to take. It basically identify the necessary actions needed for the implementation as well as determines what an organization needed to do at strategic level though it does not describes what an organization need to do after strategic decision making.

In order to implement the framework people need to be aware and learn the five criteria's and levels of the framework. Any organization will need time to accept new procedures as well as proper training is required to implement this framework which will affect the time and financial aspects of an organization.

6.5.5 Improvements:

Some improvements can be done for future research because of time constrains, so according to the feedback obtained for the evaluation process about the effectiveness, capability, usability and content of the framework are as follow:

It has be observed that the framework need to look attractive through the addition of graphics and colors because some of the users are visual learners so it would be easier and helpful for them to understand and use.

It is important that initial information in the assessment level question should be added about guiding and assisting purpose. It will be give users a better understanding about the purpose of assessment.

The framework only shows necessary activities and criteria's to move forward in the performance measurement process but it does not describes how to do it. So it would be better if an element of action to do the activity is included into it.

CHAPTER 07

CONCLUSION AND RECOMMENDATIONS

7.1 Research Overview

Performance management is basically a vast and interesting topic to study and discuss. It encourages learning and experimentation about the way of handling different aspects and scopes in a proper manner. Its importance in the construction as well as in industry cannot be denied. The goal of performance management is to ensure that the organization and its supportive systems are working in an efficient and proper manner in order to gain success and profit in business. Performance management depends upon measuring the staff performance, business performance and process performance because if you cannot measure it you can't manage it.

Performance management is useful for organization which are keen to improve their profit and business. So by measuring the performance on will get to know about the thing that need to be improve to increase profit and gain better position. The realization of performance measurement importance, knowledge and skills are the main factor which can help in smooth and effective implementation of it within an organization.

According to studies organizations are facing problems and barriers in the implementation of performance measurement. These problems can be resolved by improving the implementation process. The framework named as Performance Measurement Migration Path has been developed. Which helps and assist the organization in the implementation process in a proper and structured manner. This framework is based on criteria's and elements taken from the current adopted methods such as BSC and EFQM Excellence model. Different kind of approaches and principles are adapted for data collection and analysis. Quantitative approach is adapted for this research thesis.

The main objectives of this research is based on improvements in performance management which are as follow:

- Determine the concept of performance management / measurement.
- To which extent the established performance measurement tools and models are being used in a construction organization.
- To explore the existing performance measurements along with the indicators that are used in construction organizations.
- To achieve performance measurement targets in construction organizations, a tool must be developed.
- Lastly, effectiveness of the tool in achieving the performance measurement targets should be evaluated.

First objective deals with the interrelationship of performance management with performance measurement and its importance within the construction industry. According to literature review it is revealed that two main factors are important to assess in order to measure and manage the performance of an organization which are financial and non-financial. Many different tools and models are been used for this purpose. Chapter 2 is related to the concept of performance management and measurement.

Second objective deals with the adaptation of established performance measurement models and tools. Two of the most famous models and tools now a days are BSC and EFQM Excellence model. Both these model covers all aspects and criteria's needed to improve the performance of an organization. Which contributes to the overall improvement in the performance management of an organization. The details study is done in Chapter 2 of this report.

Third objective is related to the current studies and practices of performance measurement within the construction industry. So the study is done by comparing and knowing the current practices of performance measurement in two different countries such as UK and Pakistan. According to the literature review it has been found that Pakistan has been currently introduced to performance measurement. In this objective studies related to current approaches and processes to performance measurement within an organization is included along with its relationship with strategy development as well as hurdles and challenges in the implementation of performance measurement. Chapter 4 comprise of all these details along with the key findings.

Forth Objective is to develop a framework which help in the implementation of performance measurement. Review on the study reveals that the biggest hurdle in performance measurement is the implementation of process within an organization. So a framework named Performance Measurement Migration Path is developed through the help of case studies and literature review, to assist the organization in the implementation process. The details of this framework is discussed in chapter 5 of this thesis report.

Fifth objective of this thesis is to evaluate the proposed framework. Achievement of this objective is done by questioner. Which is made and spread to different companies and organizations in Pakistan in order to find out the effectiveness, usability and capability of the framework. The result of the questioner and analysis is done in chapter 6 of this thesis study and lastly the overall conclusion is written in chapter 7.

7.2 Conclusion

Avast study has been done on performance management. Basically things that can be concluded is, management cannot be done without measurement. Various methods have been used to measure the performance of an organization within an industry. Every method has its benefits and drawbacks. However for effective management both financial and non-financial measures have to be measured. It is important that both past and current performance have to be taken into consideration because it will help in the development of framework upon which performance measures can be developed and implemented as to identify the degree to which an organization is able to implement the strategy. Following conclusions can be drawn for this study which are as:

The main factors for the implementation of performance measurement need to be identified. All the organizational staff such as manager as well as functional have to actively involved in the implementation process of performance measurement with their full commitment. Moreover top management plays an important role in the success and achievement of the required and planned targets. Study of current practices is also done in two countries as UK and Pakistan in order to know that current situation as well as the tools and models used. Which shows that there are certain similarities and differences in

the performance measurement practices. Furthermore about the knowledge, understanding and potential improvements there are similarities among them but they are using different tools and models according to their conditions and requirements.

A new framework such as migration path was developed which is based on the two famous existing tools such as BSC and EFQM Excellence model for the implementation of performance measurement. So current studies was also used to develop this framework as well. This framework can be used as an approach by organizations of Pakistan in order to improve the performance measurement implementation process. It basically assist the organization in step-by-step implementation process of performance measurement within an organization. It consist of five elements which every organization have to consider in order to improve their performance to chive success and required targets.

At the end this framework was evaluated by the professionals and practitioners of Pakistan in the field of construction. The evaluation is about the effectiveness, capability and usability of the proposed framework. Analysis shows that this framework is effective and suitable to be used in the construction industry of a Pakistan. Although the weaknesses found within the framework are needed to be addressed in the future studies.

7.3 Research Contribution

This research emphasizes that performance management plays an important role in improving the business performance in construction industry. Measurement is a fundamental element of management. This paper also describes the performance measurement activities in two different countries such as UK and Pakistan. According to study and analysis a framework for the implementation of performance measurement is proposed in order to assist organizations of Pakistan in the implementation process. This framework is called as performance measurement migration path. Basically this research contributes in the investigation and analysis of this subject in two different countries. Secondly it contributions is also done by defining the framework which helps and assist the Pakistani organizations in the implementation of performance measurement that

enhances the overall performance of their business in the construction industry. This proposed framework consists of migrations levels and criteria's which is important for organization in the identification of current position in the performance process and develop a practical approach for taking further steps in order to improve their performance. This framework also shows the steps needed to be taken in the implementation process.

Furthermore this framework also helps the organizations in evaluating the strategy and guides the users in the evaluation process of strategy. It also leads the organization in the implementation of balanced performance measurement by identifying five different elements and criteria's need to be consider in the measurement process. These five elements are leadership, people, strategy, partnerships and resources, product, process and services. This framework basically gives a structure to performance measurement implementation and makes it easy to implement and use.

Moreover performance measurement migration path also helps in improving the capability of human resources by involving staff and encourage them to participate energetically in the measurement process and activities which dramatically enhance their performance. This framework provides easy and practical approach to the implementation process of performance measurement for improving the performance of their business.

7.4 Recommendations for Further Research

This sections discussed about the gaps which were not addressed in this thesis research due to time constrains. These recommendations for future will be based on self-evaluation and comments from different evaluators. Such as research will be done on different aspects and elements of performance measures i.e. customer perspective and partnerships and also other elements which can make framework more complex but effective and efficient for different types of business. Secondly the evaluation of capability of the framework can be done not only form the managers but also from different staff involved in the measurement process. This will gave a bigger picture and understanding about the improvements needed to be done for better performance management. Lastly

the migration path only show the current position and discuss about the elements that requires attenuation for improvements in the performance measurement but does not show how to do it, So for future these are some of the recommendations that can be done in order to refine the framework for effective performance measurement and management.

7.5 Concluding Remarks

Performance measurement migration path is a step towards the improvement of performance management in Pakistan. This framework helps in indicating the measurement of performance in a planned and structured manner. It also assist an organization in the implementation process and strategy development. Moreover it is easy to use and understand by the organization as well as by the staff. It provides solution for the obstacles and hurdles facing during the implementation of performance measurement along with the practical approach in achieving the required goal set by an organization in order to gain success in their business.

This framework provides a guidelines in the assessment of performance measurement by identifying the current position of an organization through the hierarchy of different level in the implementation process along with the identification of areas that are needed to be improved in order to achieve higher maturity.

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APPENDICES

QUESTIONNAIRE SAMPLE

Evaluation of Performance Measurement Implementation Framework

Questioner Survey

PART 1. BACKGROUND INFORMATION:

The purpose of this part is to help our analysis.

Organization Name & Address: _____

Business Type: _____

Participant Name (Optional): _____

Job Title: _____

Contact No: _____ Email: _____

PART 2. ELEMENTS OF FRAMEWORK:

The main purpose of this part to assess that usability of the framework along with the need of the model with in the organizations. This part consist of Content, Capability, effectiveness and usability of the framework. The objective of this is to identify that framework is easy to use and understand by the industry or not.

Please select the appropriate option for each of the statement to the best of your knowledge as below:

2.1 CONTENT:

1. To what extent do you agree that the words and terms used in this framework are understandable?

- a) Strongly Disagree (SD). b) Disagree (D). c) Neutral (N).
d) Agree (A). e) Strongly Agree (SA).

2. To what extent do you agree that the words and terms used are important for the implementation of this framework?

- a) Strongly Disagree (SD). b) Disagree (D). c) Neutral (N).
d) Agree (A). e) Strongly Agree (SA).

3. To what extent do you agree that the format used in this framework is easy to navigate?

- a) Strongly Disagree (SD). b) Disagree (D). c) Neutral (N).
d) Agree (A). e) Strongly Agree (SA).

2.2 CAPABILITY OF FRAMEWORK

1. To what extent do you agree that the framework is capable of improving the performance measurement practices by identifying maturity of PM activities?

- a) Strongly Disagree (SD). b) Disagree (D). c) Neutral (N).
d) Agree (A). e) Strongly Agree (SA).

2. To what extent do you agree that the framework is capable of improving the performance measurement practices by identifying migration of PM activities especially from current situation to better position?

- a) Strongly Disagree (SD). b) Disagree (D). c) Neutral (N).
d) Agree (A). e) Strongly Agree (SA).

3. To what extent do you agree that the framework is capable of improving the communication between the employees along with the augmentation of corporate culture?

- a) Strongly Disagree (SD). b) Disagree (D). c) Neutral (N).
d) Agree (A). e) Strongly Agree (SA).

4. To what extent do you agree that the framework is capable of achieving performance measurement targets?

- a) Strongly Disagree (SD). b) Disagree (D). c) Neutral (N).
d) Agree (A). e) Strongly Agree (SA).

2.3 EFFECTIVENESS OF FRAMEWORK

1. To what extent do you agree that the framework is effective in terms of improving performance measurement implementation process within an organization?

- a) Strongly Disagree (SD). b) Disagree (D). c) Neutral (N).
d) Agree (A). e) Strongly Agree (SA).

2. To what extent do you agree that the framework is effective in assisting employees and organizations in improving and understanding the performance measurement implementation process?

- a) Strongly Disagree (SD). b) Disagree (D). c) Neutral (N).
d) Agree (A). e) Strongly Agree (SA).

3. To what extent do you agree that the framework is effective in identifying the important fundamentals of management in organization's performance?

- a) Strongly Disagree (SD). b) Disagree (D). c) Neutral (N).
d) Agree (A). e) Strongly Agree (SA).

2.4 USABILITY OF FRAMEWORK

1. To what extent do you agree that the framework is simple and user-friendly?

- a) Strongly Disagree (SD). b) Disagree (D). c) Neutral (N).
d) Agree (A). e) Strongly Agree (SA).

2. To what extent do you agree that the framework helps in guiding the organizations for performance measurement processes?

- a) Strongly Disagree (SD). b) Disagree (D). c) Neutral (N).
d) Agree (A). e) Strongly Agree (SA).

3. To what extent do you agree that training is required for effective use of this framework?

- a) Strongly Disagree (SD). b) Disagree (D). c) Neutral (N).
d) Agree (A). e) Strongly Agree (SA).

PART 3. GENERAL COMMENTS:

The aim of this part is to identify the improvements required regarding all four aspects of this proposed framework.

1. How can the model be improved?

2. What are the barriers to use this framework within an organization?

3. What are the benefits of using the performance measurement implementation framework?

4. Any Additional comments?

Signature & Date