PERSONNEL PERFORMANCE APPRAISAL SYSTEM FOR CONSTRUCTION CONTRACTING ORGANIZATIONS

Thesis

Submitted in partial fulfilment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

by

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DECLARATION

I hereby *declare* that the Research Thesis entitled **"Personnel Performance Appraisal System for Construction Contracting Organizations"** which is being submitted to the National Institute of Technology Karnataka, Surathkal in partial fulfilment of the requirements for the award of the Degree of Doctor of Philosophy in Civil Engineering, is a bonafide report of the research work carried out by me. The material contained in this Research Thesis has not been submitted to any University or Institution for the award of any degree.

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CERTIFICATE

This is to certify that the Research Thesis entitled **"Personnel Performance Appraisal System for Construction Contracting Organizations"** submitted by Chaithra N Kowshik (Register Number: 148059CV14F19) as the record of the research work carried out by her, is accepted as the Research Thesis submission in partial fulfilment of the requirements for the award of degree of Doctor of Philosophy.

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ABSTRACT

The nature of the construction industry is dynamic, and employees play multiple roles. This makes performance evaluation of construction employees complex and Organizations face challenges in streamlining the Personnel Performance Appraisal (PPA) system towards achieving distinct objectives. Previous studies have identified behavioural traits, attributes, personality traits, traits for particular designation in the organization, which contribute in improving the performance. Research has not been conducted on Personnel Performance Appraisal Systems in construction organizations in Indian context.

This study focuses on proposing a framework for the PPA system and emphasized on identifying performance dimensions for construction contracting employees. Performance dimensions are classified as qualitative and quantitative dimensions and identified for different levels of management and integrated into the framework. This study also explored the nature of current PPA systems in construction organizations, and identified shortfalls during the appraisal process.

The study adopts a mixed-method approach to achieve the objectives. Mixed method consists of a qualitative and quantitative approach. As part of a quantitative approach, a questionnaire survey is used as a primary approach. Frequency method, descriptive statistics and factor analysis are used to analyse the data. Semi-Structured interviews are used as part of the qualitative method. Appraisal forms and related documents from various organizations supplemented the data from interviews and survey. A comparative case study is conducted between an IT (service based) organization and a Construction Contracting Organization. This study focuses on management practices. Further case studies are conducted in construction contracting organizations to understand current PPA systems in use and their various aspects. The results indicated Self-appraisal is a part of the PPA process; dimensions are established by industry practice, job descriptions are set by managers and immediate superiors. Most of the organizations have taken steps to improve employee performance. Interpersonal relationship and bias have affected the employees during the PPA process. From exploratory factor analysis, 39 performance dimensions are identified and grouped as

six key dimensions based on factor loadings. Case studies supported the results of the questionnaire survey; additional dimensions such as cost, time-related dimensions are identified. The performance dimensions are mapped into 3 levels of management and an assessment framework is proposed. Further, the appropriateness of the framework is validated with the help of experts. This proposed framework is expected to help HRM Department and appraisers in CI to strengthen the PPA systems in the Indian context.

Key Words: Personnel Performance Appraisal, Construction Organizations, Performance Appraisal Dimensions, Performance Appraisal Framework

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

ACRONYMS

CI	Construction Industry
HRM	Human Resource Management
KPD	Key Performance Dimension
KPA	Key Performance Area
KRA	Key Result Area
PA	Performance Appraisal
PD	Performance Dimension
PPA	Personnel Performance Dimension
SPSS	Statistical Package for the Social Sciences
IT	Information Technology
NOC	No Objection Certificate
SME	Small –Medium Enterprise
DM	Decision Maker
CO	Coordinator
TC	Technical Cadre

CHAPTER 1

INTRODUCTION

This chapter presents an overview of the background of the study, problem statement, research aim and objectives, the scope of the research and organization of the thesis.

1.1 Background

Construction industry (CI) accounts for a significant portion of the nation's economic activities; also, it is the second-largest industrial sector in India. Indian construction industry is labour intensive, providing jobs to around 32 million people (CIDIC 2012-2017) and expected to increase in the upcoming years. CI stands unique due to the work being executed in remote places, unforeseen conditions, unforeseen weather, and environmental conditions (Shirur and Torga 2014). CI is a combination of various stakeholders such as organized and unorganized participants, including construction workers, supervisors, contractors, and material manufactures/suppliers (Chan et al. 2004).Complexity, inconsistent performance, inconsistent quality, and lack of talented manpower remain major areas of concern for this sector (Rai and Lele 2013).

Human Resource Management (HRM) is the process of managing people in an organization as well as interpersonal relationships. HRM is defined as "coherent approach to the management of an organization's most valued assets; the people working there who individually and collectively contribute to the achievement of its objectives" (Armstrong 2006). In an organization, human resources are the resources that convert resources into useful output. HRM is all about finding the motivations for an employee, objectives of an organization and aligning the employee goals with organizations objectives. HRM has the capability to enhance productivity in the construction industry; however, this potential has not been harnessed due to lack of awareness of best practices in this area. The unique nature of construction sector does not allow HR managers to carry out their functions effectively and the challenges are not generally recognized in project management practices (Huemann et al., 2007; Vohra, 2014).

Construction organization's performance and project performance depends upon the quality of employees (Abdel-razek 1997; Shirur and Torga 2014) because talented employees are significant for any successful business. Personnel Performance Appraisal (PPA) system is a part of HRM practice which helps to improve individual performance, thereby improving organization and industry performance at large. Though HRM is being used in Indian construction industry, very little effort has been made to improve its effectiveness. A vague condition exists, i.e., traditional methods of HRM are being followed without a clear understanding of the complexity and nature of the industry and on the other hand, human resources is a major resource and is temporary in nature (Rai and Lele 2013). Very few literature are available regarding personnel performance management in Indian construction context. Considering the absence of research related to HR practices in the Indian construction sector, this study enhances one of the HR practice specifically, the PPA systems.

1.2 Problem Statement

CI is risky, complex and dynamic due to its characteristics. Most of the construction management researches are at the organizational level or project level. These studies indicate the performance of the project/organization in a particular focus area. Though studies have been conducted on HRM/PM at the global level, the CI is often been criticised for poor HRM practices. There have been few instances that the projects have to face crisis due to employees' behaviour (Loosemare and Dainty 2003). Since the CI is entirely dependent on human resources, it is necessary to have good HRM practices. However, PPA practice in Indian construction industry is not investigated in detail. As mentioned earlier HRM practices including PPA influence employee performance and organizational growth. Hence studies are necessary to address the issue at the grass-root level. Studies at this level have the potential to solve problems related to employee performances which lead to meeting the organizational goals at large.

Organizations can accomplish their predefined goals and objectives by maintaining an ideal job performance level. A well-planned employee evaluation system would sustain job performance. PPA plays a vital role in the organization to measure

employee performance. Though the PPA system exists in the organization, most construction organizations consider it as a formality rather than a necessity and the PPA system is not being used properly (Cheng and Li 2006). Studies on performance management, performance appraisal, factors contributing for an effective appraisal system, have been carried out worldwide in many sectors. However, PAS studies focused construction industry in general and Indian construction industry in particular are scarce and are not well articulated.

While the industry is human resource intensive, there have been only few studies that have been conducted with respect to appraisal issues, performance dimensions and appraisal systems specific to construction industry. Past studies reported about employee satisfaction, motivation in relationship with performance appraisal (Kuvas 2006), behavioural indicators for construction employees (Cox et.al 2005), competencies for Managers (Madter et al. 2012), Project coordinators (Jha and Iyer 2006). Previous studies illustrated are restricted to a generic way of appraisal system, a particular element of employee performance (for ex effective appraisal method, satisfaction, fairness, politics), and PDs for particular designations. These studies focus on a particular area and an overall structured framework is found to be missing. This fact acted as a strong motivator to take up this study on PPA systems with focus on streamlining them for an organization's benefit.

In order for organizations to facilitate the PPA and to improve their overall performance they need to ensure that the PPA system is implemented in a better way. Facilitating the improvement of the PPA in CI requires understanding the following

a) nature of PPA systems
b) process of PPA
c) challenges involved with PPA.

This has led to the following key research questions.

- *What are the differences between CI and other industries w.r.t PPA?*
- *What are the challenges faced by CI that affect the PPA systems?*
- *How to streamline the PPA in construction industry?*

These questions and have led to the research objectives which are detailed out in

section 1.3. This research intends to explore the current scenario of personnel appraisal systems in Indian construction contracting organizations, issues associated with the systems and PD's for employee evaluation. The knowledge from the exploration is developed into a framework for future PPA systems.

1.3 Research objectives

Aim: To propose personnel performance appraisal systems to deliver desired HRM outcomes in construction contracting organizations.

1) To study the existing Personnel Performance Appraisal (PPA) systems in construction industry and compare it with the IT industry.

2) To analyse appropriateness and identify shortfalls in PPA systems; and develop Key Performance Dimensions.

3) To integrate developed Key Performance Dimensions in PPA framework.

4) To validate the proposed PPA framework.

1.4 Research Scope

This research focuses on the existing PPA systems, investigating the characteristics of PPA systems in Indian construction organizations. Only private organizations are considered. Comparing with IT (service-based) industry with respect to HRM and PPA practices became an integral part of the objectives to understand the differences and similarities. Further details are given in chapter 4. This research addresses various issues; relevant factors associated with PPA evaluation and provide an overall image of PPA in CI. In terms of geographical coverage, this study is confined to construction organizations in India. Data is collected from relevant experienced professionals from the industry. Due to time and resource constraints the case studies conducted are restricted to organizations in Karnataka, India. In carrying out this study main focus is on private contracting organizations of different sizes i.e. small, medium and large organizations as private organizations would permit the researcher to collect the data on PPA which is a key component of this study.

1.5 Significance of the Research

Output of this study identifies the challenges in existing PPA systems in CI context, which are important to develop a framework. This output will help construction

organizations to minimize those challenges that are effectively measured during PPA process. Researchers have explored PPA with respect to aspects such as satisfaction, effective appraisal, perception of appraiser/appraisee, PDs for specific designation in a generic way.

Hence, this study fulfils the need to align the PPA system in construction organizations, which contribute to successful HRM outcomes in the Indian context. In addition to its contextual contribution, this study adds the comparative study of PPA systems between an IT (service-based) organization and a construction organization which is considered as an additional case study. The classification of dimensions into three management levels, i.e. decision-makers, coordinators and technical cadre will simplify the understanding of the dimensions while evaluating the employees.

1.6 Overview of the thesis

The outline of this thesis report is as follows:

Chapter 1: Introduction

This chapter introduces the background of the study, problem statement, objectives of the research, scope of the study and its significance.

Chapter 2: Literature Review This chapter reviews the literature on history of PPA, theories related to PPA, PPA concepts which include criteria for effective PPA system, methods and PDs. In addition, this chapter summarizes issues in the existing PPA systems.

Chapter 3: Research Methodology

This chapter provides comprehensive discussions regarding the research methodology adopted in this study. Mixed method approach is adapted to achieve the objectives. Quantitative data is collected through questionnaire surveys, while case studies are used to obtain qualitative data. This chapter explains the sampling method, data collection and result analysis methods with respect to the research objectives.

Chapter 4: Comparison of PPA systems in IT(service –based) and Construction organization.

The chapter reviews HRM and PPA practices in different sectors in India by a thorough review of literature. Semi-structured interviews method was used to collect the qualitative data. A comparison was made between a construction organization and

an IT (service-based) organization and identified why PPA system in IT organization performs better.

Chapter 5: Quantitative data analysis

This chapter presents data obtained from a questionnaire survey and data was statistically analysed and reported. Shortfalls in the PPA systems, Key Performance Dimensions were identified as an outcome of the survey.

Chapter 6: Case studies on Construction Contracting Organizations

This chapter focuses on construction contracting organizations to understand the current scenario of PPA systems. This chapter presents the qualitative findings of four case studies of Indian construction contracting organizations. Each case study demonstrates the background of the organization, existing PPA practices and associated challenges.

Chapter 7 Proposed framework and its appropriateness

This chapter integrates findings from the questionnaire survey and semi-structured interview results, which are presented in chapter 5 and chapter 6, and proposes a framework. Also, this chapter presents validity of the framework with respect to its appropriateness for implementation.

Chapter 8 Conclusions and Recommendations

This chapter summarizes the overall conclusions and recommendations. It also discusses the contribution to the body of knowledge, limitations and scope for future research.

CHAPTER 2

LITERATURE REVIEW

This chapter provides a detailed review of basic definitions of PPA, theories related to PPA, criteria's for effective PPA and PPA process. It also focuses on different methods to measure the employee performance, identifies PDs and shortfalls in PPA for CI.

2.1 Role of HR in Indian CI

Construction industry (CI) in India is second largest sector contributing to the Indian economy. Liberal reforms have been introduced by the Government of India to unlock the true potential of construction sector and provided industry status in the year 2000, which also included the government undertaking Public-Private Partnership Projects (Rai and Lele 2013). HRM is one of the fundamental functions of the project management, plays a strategic role in an organization's success for any successful business, talented employees are significant. People are assets of organization especially in labour oriented industry like CI (Loosemore et al. 2003).They are the live resources and managing live resources is risky and challenging at the same time (Prajapati et al. 2015).

Performance appraisal has a history from the year 1800 and the year has been marked as the beginning of performance appraisal in the cotton mill industry (Wiese and Buckley 1998). The history of formal performance appraisal (PA) started during the First World War by the US army. It was termed as 'man to man' rating system. During 1920-30, PPA was adopted to industrial workers and called as 'Merit Rating Programme'. In the 1950s, PA was adapted by organizations for technical, managerial and personnel (Khanna and Sharma 2014; Fredie et al. 2015).

PPA is an organized assessment of the employee's performance at work. "Performance appraisal is defined as a formal, structured system of measuring and evaluating an employee's job, related behaviour and outcomes to discover how and

why the employee is presently performing on the job and how the employee can perform more effectively in future so that the employee, organization, and society benefits" (Schuler and Jackson 2005). PPA is discussed more comprehensively in the section 2.3.

Job performance evaluation is also known as personnel performance evaluation is one of the powerful tools of the management system, which can influence an individual's career and work-life (Cheng and Li 2006), it also evaluates individual's performance in an organization (Grote 2002).

2.2 Theories related to performance appraisal

Individual performance is connected with interpersonal skills, teamwork and positive environment. When the industry is people-oriented, individuals tend to have their own perspectives. Issues may arise due to differences in opinions and human behaviour. These differences in opinion affect the interaction of the individual with manager, goals and reward system. During such situations, managing employee's performance in the organizations is challenging. Different motivational techniques need to be used depending on the case. Following theories were developed by various researchers.

2.2.1 Goal-setting theory

Goal-setting theory is developed by Latham and Locke in 1970s. This theory emphasised on relationship between goals and performance. According to Latham (2004), the goals should be specific regarding the desired outcome to avoid any misunderstanding. Goals should be challenging. If the goals are challenging it encourages the employees to put in continuous efforts and develop strategies to achieve them. Accomplishment of goals leads to employee satisfaction and motivates employees; if not leads to demotivation and lowers morale (Latham, 2015). There is a limit for attainability of difficult goals. Self-efficacy places a major role in attaining the goals (Lunnerberg 2011). If the goals are unattainable it impacts employee performance. Building up self-efficacy among employees is one of the success factors in goal setting process. Allowing employees to participate in goal setting process would lead to acceptance of the goals, tends to enhance commitment toward the goals.

Also, participating in goal setting process helps employees to understand, accept or reject the goals and orient towards it.

2.2.2 Hierarchy of needs theory

Hierarchy of need theory also called as Maslow's hierarchy of needs proposed by Abraham Maslow in 1943. He classified that human needs in a pyramid of five stages are categorized into physiological, safety, belonging or social needs, esteem and self-actualization (in the ascending order); in which an individual tend to satisfy himself from the bottom up (Ozguner and Ozguner 2014). In the context of organization, physiological needs correspond to salaries, rewards, and work environment. Safety needs correspond to insurance, job security, and retirement plans. The third in the hierarchy is belonging or social needs, which corresponds to generating feelings such as acceptance in their work environment by participating in informal office gatherings or having family outings (Jerome 2014). Esteem needs relates to recognition and promotion. Self-actualization is at the apex of this hierarchy and is satisfied by getting and achieving specific challenging works, it is also fuelled by individual's creativity and innovation (Ozguner and Ozguner 2014). An employee's stage in this hierarchy of needs is defined by the need previously satisfied and the employees need does not change till the current needs are satisfied. Till the employee reaches the apex stage of self-actualization, his or her performance will not be all-out.

2.2.3 Expectancy Theory

Vroom proposed a theory called Expectancy theory in 1964, as it is based on Expectancy (E), Instrumentality (I) and Valence (V) related to employees work behaviour (Wahba and House 1972; Lloyd and Mertens 2018). It is also called as EIV theory. Here Expectancy is associated with individual belief that positive effort will lead to better performance. Instrumentality refers to belief that good performance leads to desired reward. Valence is emotional expectation that any individual holds towards the desired reward. This theory summarises that individuals may have different set of goals or objectives, but can be motivated if they are convinced that there exists a relationship between effort and performance; and favourable performance will lead to the desired reward (Navarro 2009).

2.2.4 Herzberg's two -factor theory

The two factor theory was proposed by Herzberg in 1959. The concept of this theory is based on two factors i.e. motivation factors and hygiene factors. These two factors are related to work environment in the organization. Motivation factors refer to the factors that aid the employees to get satisfaction in the organization. Factors that are associated with satisfaction are promotion opportunities, opportunities for personal growth, recognition, responsibility, achievement and work itself. Hygiene factors are that causes dissatisfaction to the employees; they are quality of supervision, compensation, company policies, physical working conditions, relationship with others and job security (Ruthankoon and Ogunlana 2003).

2.2.5 Equity theory

Equity theory was proposed by Adams in 1963 and is based on the balance between employee's input and output. Input associated with factors such as individual's effort, skills applied and technical knowledge. Outputs are associated with factors such as salary, rewards, benefits and recognitions. The perception of an employee about being treated fairly or justly in terms of input and output in the organization is considered as positive equity. If an employee thinks that he is being treated unfairly or unjustly in terms of input and output is considered as negative equity. This positive equity or negative equity has impact on motivation, performance of an employee that correlates with appraisal (Thurston and McNall 2010).

2.2.6 Reinforcement theory

Reinforcement theory was developed by Skinner in 1969. This theory focused on employee's behaviour due to certain consequences. Here, employee's behaviour may be rewarded or may not be rewarded. There are four primary approaches to reinforcement theory: positive reinforcement, negative reinforcement, punishment and extinction (Villere and Hartman 1991). By using these approaches managers can influence/change behaviour of employee, which the organization desires. Positive reinforcement is giving positive response/reward for the action of an employee. This is to encourage the employee to do the same. Negative reinforcement is similar to positive reinforcement; employee will be rewarded by removing the unwanted/undesired behaviour for the organization. Punishment is to remove

unwanted/undesired behaviour of an employee at workplace by penalising or punishing for the undesired behaviour or action. Extinction is the desired behaviour that is retained even after the reward fades away (Mwita 2000).

2.2.7 Procedural justice theory

Procedural justice theory was proposed by Thibaut and Walker in 1975. This theory focuses on the features of procedures that are apparent to be fair (Greenberg and Tyler, 1987). In the organizational context, PPA was found to be associated with this theory. Procedural decisions refer to all the process included in the PPA i.e. how and on what basis an employee and his peers get evaluated, how the problems are addressed. In this theory, how an individual's reaction is and how they perceive the procedure is focussed upon rather than the actual procedure. This theory holds well when the employees consider the appraisal to be fair (Leventhal 1980)

2.3 Personnel Performance Appraisal system

Job performance evaluation is also known as personnel performance evaluation is one of the powerful tools of the management system, which can influence an individual's career and work-life (Cheng and Li 2006), it also evaluates individual's performance in an organization (Grote 2002). This section focuses on purpose, frequency and evaluation of appraisal.

2.3.1 Purpose of PPA

PPA has various purposes. The main purposes are the administrative purpose and developmental purpose (Abdel-razek 1997). Youngcourt et al. (2007) added another purpose to PA, i.e. role definition purpose. Iqbal et al. (2014) discussed administrative, developmental, role definition and strategic use of PA in their research. Administrative purpose includes salary pay levels, promotions, retention, and termination. Developmental purpose includes job feedback, training and counselling (Abdel-razek 1997; Celik 2014). Cleveland et al. (1989) came up with four types of administrative purposes i.e. between person, within-person, system maintenance and documentation. According to him, an organization should focus on developmental purpose. Role definition purpose depends on the PPA outcome. Based on the PPA results appraiser defines and communicate roles to the appraisee. Basically, after the performance feedback, a role is defined (Youngcourt et al. 2007;

Iqbal et al. 2014). Strategic purpose indicates the self-monitoring of the appraisee and appraiser (Iqbal et al. 2014). Overall like all other organizations, PPA is a dynamic and evolving process for construction organizations. PPA has helped employees to enhance their performance and productivity (Shah and Murphy 1995).

2.3.2 Frequency of Appraisal

Most organizations conduct appraisals annually. Unfortunately, there has been no empirical justification for the annual appraisal period (Dipboye 2018). Often the annual appraisal is in practice and some organizations conduct bi-annually (Mathis 2015). Bayo-Moriones (2020) mentioned the reason based on PPA results in the administrative decisions such as an increase in salary, promotions take place in the organization annually hence the PPA takes place annually. On the other hand, an increase in the frequency would benefit the appraisal systems. However, frequent evaluation of an experienced employee, who has mastered the job already, high performing employees would go wrong and demoralise them (Dipboye 2018).

2.3.3 Evaluation of Appraisal

Most commonly, the immediate supervisor evaluates the employee (Dipboye 2018). It is assumed that the immediate supervisor is the most qualified person to evaluate the employee' performance (Mathis et. al 2015) Managers or immediate supervisors know the nature of the job and they work closely with the employees during the pre-appraisal period. This would help to understand the employee behaviour/tasks, and further aid in job performance evaluation Longnecker and Flink (2017). But there are circumstances or PPA methods that include, peers, subordinates, customers, the supervisor evaluating the employee (Bayo-Moriones et.al 2020).

2.3.4 Process of PPA

In the previous sections, the history of appraisal, the purpose of PPA, frequency, benefits of PPA, aspects to be considered for effective PPA were discussed. This section further elaborates the stages process of PPA.

2.3.4.1 Establishing performance dimensions

The initial step in PPA process is to identify and establish performance dimensions/standards/criterion/indicators (Smith, 1993) (Note that different studies have used different terminology). In this study, the term Performance Dimension (PD)

is being used. PDs are the dimensions which measure employee's performance. The set of PDs are called as Key Performance Dimensions (KPD's) which focus on the aspects of individual and organizational performance that are the most critical for current and future success of the organization and are used as a necessary tool by managers, supervisors to measure their success in achieving the objectives (Koopmans et al. 2011; Sari 2015). Company objectives are long term oriented. However, it can be broken down into small achievable objectives. Based on the objectives, KPDs can be set for the employee's and revised according to the goals. Different types of industries will be having different KPDs based on the nature of their job and the type of organization.

A standard PD should consist of the following characteristics: (Yao and Li 2014)

Specific: Indicators should be clear and definite to the employee.

Measurable: Work should be quantifiable.

Achievable: Target or goals should be doable, so that employee can complete.

Relevant: Work and performance standards should be realistic and related to the employee.

In construction industry, measuring individual performance becomes difficult when the work is interdependent. In such cases, job performance could be perceived as an individual's overall performance on specific dimensions. Cheng and Li (2006) presented analytical network process approach to prioritise the job performance criteria considering project performance. Performance evaluation design varies among employers. The employer faces challenges in measuring performance when employees perform multiple tasks. In such cases, it would be easy to measure performance based on a particular situation of a job and based on appraiser judgement (Moriones et al. 2012). In a broader way, task proficiency, effort, behaviour, personal disciplines are essential measures of the job; however, these measures should not replace the main dimensions. This measure would supplement the appraisal (Taormina and Gao 2009). Performance dimensions from the literature related to the other industry and construction industries are listed in Table 2.1 and Table 2.2 respectively.

2.3.4.1.1 Performance dimensions for appraisal

The performance assessment should be balanced with behavioural competencies and work goals achieved (Armstrong 2006). Table 2.3 summarises the general dimensions that could be adopted for any organizations as recommended by different authors. Also, performance standards/dimensions/indicators/criteria required for the job or particular designation related to construction industry as identified by various authors is shown in Table 2.1.

Table 2.1 Generalised performance dimensions

Authors	Description	Performance Dimensions
Viswesvaran et al.2002	The authors derived ten PDs from different research articles applicable to all organizations.	Overall job performance, productivity effort interpersonal competence administrative competence quality job knowledge leadership compliance or acceptance of authority.
Armstrong (2006)	The author has given the criteria to measure the performance	Achievements related to objectives, knowledge and skills and its application, behaviour competencies, day to day effectiveness.
Taorminaand Gao(2009)	This study identified employee acceptable PDs. The study was conducted in Chinese context. Based on their culture, values. However author indicated that these PDs can be utilized across all culture.	work efficiency, work quality, meeting deadlines, knowledge about the job, quantity of work, oral communications ability ,ability to work in teams, problem-solving ability, relationship with peers , co-operation with co-workers, ability to deal with people ,written communications ability, ability to resolve conflicts, punctuality ,ability to control, work helpfulness toward others, loyalty make helpful suggestions, relations with customers, make helpful suggestions relations with customers, ability to adapt to new environs, hardworking, motivation, balance work and family concerns dedication toward work, respectfulness to senior staff, handling customer complaints, persistence creativity, accepting overtime work being careful, sense of humour, good looks.
Sudharshan (2009)	PA criteria used by organizations in India	teamwork (including collaboration, cooperation, interpersonal relations), work quality (including job competence, knowledge, skill), people management and development, communication (including correspondence), motivation and personal initiative, responsibility (or dependability or commitment) innovation (including change, creativity), customer satisfaction (or focus or responsive), integrity, productivity (efficiency, time management), discipline (including penalties or warnings), decision making (judgemental), problem-solving

		(analytical)
Koopmans et.al (2011)	This study classifies the individual performance indicators into four major performance dimensions	*Task Performance* : Completing job tasks, work quantity, work quality, job skills, job knowledge, keeping knowledge up-to-date, working, accurately, and neatly ,planning and organizing, administration, decision making ,solving problems, oral and written communications, monitoring and controlling resources. *Contextual Performance*: Extra tasks, effort ,initiative, enthusiasm, attention to duty,resourcefulness,industriousness,persistence,motivation,dedication proactivity, creativity, cooperating with and helping others, politeness effective communication, interpersonal relations, organizational commitment *Adaptive Performance :* Generating new, innovative ideas, adjusting goals and plans to situation learning new tasks and technologies being flexible and open minded to others, understanding other groups or cultures, showing resilience, remaining calm, analysing quickly, acting appropertiely *Counterproductive Behaviour* : Off task behaviour, too many or long breaks, presentism, tardiness, doing tasks incorrectly, accidents, insulting or gossiping about co-workers, disregard of safety, misusing privileges, aggression, theft, substance use
Koopmans et.al (2014)	Previous studies of Koopmans et.al (2011) identified several indicators to measure individual work performance. In this paper identified the 23 indicators which are generic to all jobs. The author claims that this is the first ever study that has identified the indicators that could be applicable to all jobs.	*Task Performance:* Work quality, Planning and organising work, Being result oriented, Prioritising and Working efficiently *Contextual Performance:* Taking initiative, Accepting and learning from feedback, cooperating with others, Communicating effectively, showing responsibility, being customer oriented. Being creative, taking on challenging work tasks *Adaptive Performance:* Showing resiliency, Coming up with creative solutions to novel , difficult problems, keeping job knowledge up to date, Keeping job skills up-to-date Dealing with uncertain and unpredictable work situations, adjusting work goals when necessary *Counterproductive Behaviour:* Displaying excessive negativity, doing things that harm your organization, doing things that harm your co-workers or supervisor, purposely making mistakes.
Carlos and Rodrigues(2016)	Developed individual performance measures which are applicable across various jobs and cultures.	Interpersonal and relational skills, persistent, effort personal characteristics organizational conscientiousness, efficiency, cooperation ,job knowledge ,organizational skills.
Hosie and Nankervis, (2016)	Reported the manager's job performance measures. Classified into two types	a)Contextual Performance Following, Persisting, Helping, Endorsing b) Task performance Delegating, Monitoring, Technical, Influencing
Dipboye, R. L. (2018).	Listed nine broad performance areas for employees that can be	Technical performance, Communication, Demonstrating effort (initiative, persistence and effort),Counterproductive work behaviour,

	considered commonly for all jobs	Facilitating peer and team performance, Hierarchical leadership(consideration, initiating structure, goal emphasis, empowerment and facilitation, training and coaching, and serving as a model),Management performance (decision making, problem solving, and strategic innovation, goal setting, planning, organizing, and budgeting, coordination, monitoring effectiveness, external representation, staffing, administration, and obtaining commitment and compliance, Peer/team leadership, Team members/peer management performance (planning and problem solving, determining within-team coordination requirements and workload balance, and monitoring team performance.)

Table 2.2 Performance dimensions relevant to CI

Authors	**Description**	**Performance Dimensions Relevant to CI**
McFarland(1996)	emphasizes the requirement of individual abilities, motivation and goals to maintain the performance of an engineer in construction industry	Ability, motivation, satisfaction, feedback and supporting factors are technologies and working environment.
Abdel-razek(1997)	studied how construction managers would like to get evaluated. Results indicate performance dimensions for construction managers.	Efficient resource utilization, administrative and managerial efficiency, technical efficiency, record-keeping and documentation of experience, ability to innovate and develop, personal integrity, ability to communicate and establish contacts, discipline and adherence to company regulations and procedures, honesty, achievement of planned agreed objectives, adherence to and achievement of quality, profitability.
Hanna and Brusoe (1997)	listed out criteria to be considered in the Performance Evaluation process for electrical construction contractors	Leadership, personal conduct, sets good example, communication skills, public/customer relations, attendance, attitude, trustworthiness, ability to motivate, dependability, productivity, ability to catch mistakes, quality of work, ability to deal with problems, safety awareness, delegation of responsibility, ability to instruct, work ethic, initiative, accepts responsibility, ability to work with others, knowledge of work, planning, communication with crews, scheduling, and maintenance of records.
	necessary skills for the project leader are identified through perception of Contractors,	Leadership, planning, team building, controlling, organizing communication, delegation, decision making, business knowledge, technical

Odusami, (2002)	clients, consultants for successful projects.	knowledge, stress management, problem solving, staffing and directing
Dainty et al. (2003)	Identified performance criteria for construction project managers related to individual performance	Team building, decision-making mutuality and approachability, honesty and integrity, communication, learning, understanding and application self-efficacy, external relations.
Dainty et al. (2004)	Managerial competencies are identified for recruitment and to improve the mangers	Composure, team leadership, directiveness/assertiveness, achievement orientation, analytical thinking, flexibility, teamwork and co-operation, initiative, information seeking, conceptual thinking, impact and influence, focus on client's needs
Cox et al. (2005)	Identified behavioural indicators of the employees for the appraisers in the construction organization to improve the work performance as well as for HRM Decisions.	Motivated behaviour ,committed behaviour ,satisfied behaviour and loyal.
Jha and Iyer (2006)	Identified attributes of project coordinator for the project success.	Timeliness, maintaining records ,interpersonal skills, relationship with client, consultant and contractor technical knowledge of the subject, coordination for achieving quality, liaison skills, knowledge of project, finance, communication skills ,reliance on systematic approach, understanding of contract clauses, monitoring skills, planning skills ,forecasting skills, facilitating skill ,resource utilization skills, belief in team playing spirit, analytical skills ,concern for other's ego concern for conciliation, motivating skills, follow up quality.
Cheng et al.(2007)	Identified task related dimensions which would maximize project outcomes	Responsibility, quality of work, ability job knowledge, experience, efficiency, accuracy, judgment and initiative.
Mouchi et al. (2011)	Identified required skillsets for a construction manager for better project outcomes when the complexity is more	Technical skill and experiential knowledge, communication and people skills, leadership, planning and risk management, vision and focus on end results.
Madter et al. (2012)	Identified individual competencies for career development in construction industry, which can be used for performance assessment of	Achievement orientation, analytical thinking, assertiveness, change implementation, change management , communication skills , conceptual thinking , concern for order, conflict management, customer service orientation, developing others,

	employees.	directing programme/project integration, influencing skills, information seeking, initiative/decisiveness, interpersonal understanding, leadership , negotiation skills , organizational awareness, organizational commitment , project life cycle/holistic view, project ownership, project sponsorship, relationship management, seeks opportunities to improve, strategic thinking , team working , technical skills , value management.
Arditi et.al.(2013)	Investigated the difference between male and female managerial competencies and found be women are as competent as men.	Initiative, Innovation, Flexibility/Adaptability, Analytical thinking, Decision making, Planning, Quality focus, Oral communication, Sensitivity, Relationships, Teamwork, Achievement, Customer focus, Business awareness, Learning orientation, Authority/Presence, Motivating others, Developing, Resilience
Ghasemi et.al (2015)	Proposed surprise incentives for ensuring safety at the construction site to make safe environment and behaviours of employees	Proper use of PPE, record and report near misses, Record and report minor accidents ,Record and report unsafe conditions (unsafe machinery, unsafe environments, etc.)
Jacobsson, M. and Merschbrock, C. (2018),	Explored the role, practices and responsibilities of BIM coordinator/specialist/manager .	Coordination, monitoring, checks communication flows. Apart from these skills, It requires new set of, expertise . Construction managers need to have IT planning, IT budgeting, IT resourcing skills to get work done from the BIM coordinators.

2.3.4.2 Communicating dimensions to appraisers and appraisee's

After establishing PDs, the same should be communicated to employees (Smith 1993). Loosemare (2003) has mentioned two types of communication for employees in the organization i.e. i) downward communication: where managers communicate to employees and keep them informed about new policies, directions, goals and priorities. ii) Upward communication: where employees communicate to managers, to seek suggestions, make sure that the employee's opinions, perspectives have been considered. The study also mentions one way and two-way communication and has suggested that two-way communication is always better for the manager and employee relationship. Rubin and Edwards (2018) recommended that interpersonal

communication has to be improved in the organization instead of changing the performance appraisal system.

2.3.4.3 Monitoring the performance

Employee performance monitoring is a continuous process in any organization and is generally done by immediate supervisors Dipb. However, supervisor cannot monitor individual employee effectively, when the number of employees to be monitored is high. Hence, based on the performance dimensions established by organization, employee performance could be monitored effectively by the immediate supervisors. It ensures that employee performance is oriented towards organizational goals or not (Elnaga and Imran 2013). Performance monitoring shows the effective supervision exists and it's interconnection with organizational performance and job satisfaction.

2.3.4.4 Measurement of performance

The main objective of measuring performance is to ensure that an employee is performing his job according to the organization's goals, objectives and organization's expectations or not. The appraiser has an idea regarding the employee's role, responsibilities, goals, based on which he evaluates the employee. Employee behaviour towards job supplements the performance evaluation (Campbell and Lee 1988). Performance could be measured formally or informally. Different organizations have different methods to evaluate their employees (Akinbowale 2014). PPA is the chance for an employee to show his ability, strength and contribution to the organization. Employees get to know about their work, their weaknesses, and individual contribution to the work and ways to improve themselves. It is beneficial for employee and organization (Roberts 2003). PA methods have been evolving with time. Performance appraisal for employees is of two types, i.e. i) Informal appraisal – This is an informal process where an employee gets continuously evaluated for his work in the organization. ii) Formal appraisal – This process is conducted to evaluate the employee performance for his work in a systematic way between certain intervals of time. Kateřina et al (2013) have listed different techniques for assessing the employee's based on different objectives. This literature classifies the techniques into:

- Traditional methods
- Modern methods

These methods have been discussed in section 2.4. Apart from these methods, self-appraisal is also part of the PPA process.

Self-appraisal is a process where employees asses their performance using a structured approach. This is a common practice and it is usually combined with the appraisals. It is used as an evaluation and development tool (Campbell and Lee 1988).This approach facilitates constructive reviews. This allows the employees and supervisor to solve the problem on sharing basis with a focus on identifying the key issues which employees are facing and encouraging them to think about issues involved. This assessment would be the basis for discussion with their supervisors in the review meetings (Armstrong 2009). Baruch (1996) discussed self-appraisal and appraiser evaluation, advantages and disadvantages of self-appraisal system. From the organization point of view, self-appraisal is less valid and reliable when it is connected to compensation and benefits. This method tends to have lenient ratings when compared to their supervisor ratings. On the other hand, self-appraisal shows the organization's belief on employees for obtaining a genuine feedback. In another way, Self-appraisal reduces criticism, manager's disagreements towards the employee's performance and acts as a defensive tool for the employee Armstrong(2009). However, this method initiates the employee and supervisor relationship (Dipboye 2018).Baruch (1996) mentioned in his previous studies that the satisfaction of employees was higher when self-appraisal is implemented. The study suggested to implement a self-appraisal system and compare with appraiser's evaluation.

2.3.4.5 Communicating and discussing the performance to employees

The actions taken by the appraisee's towards the job is evaluated and communicated through performance feedback by the appraisers. Performance feedback aims to improve individual employee's performance. Performance feedback plays a vital role in the PPA process. It helps to decrease performance ambiguity, supports personal development, makes it easy for adaption to change and improves superior-subordinate relationship (Kaymaz, 2011). However, relationship depends on how performance feedback is given. The appraiser identifies appraisee's weakness, provides negative feedback, about what went wrong, wrongdoings, unaccomplished jobs and finally

suggesting them to improve. This type is a weakness-based approach. The intention is supposed to be identifying potential flaws that could be improved among employees. But this negative approach has affected the individual, team and organizational performance. Also, this would create a negative impression on appraisees. The appraiser identifies appraisee's strength by providing positive feedback about skills, knowledge, performance and asking them to improve based on their strength. This would create a positive environment and motivate them to improve. This kind of approach positively reflects in their behaviour. Aguinis et al. (2012) gave the clear difference between weakness-based approach and strength-based approach for performance feedback and recommended to adopt a strength-based approach while giving performance feedback.

2.3.4.6 Steps necessary to improve performance

Organization performance and employee performance is directly proportional. Qualified employees are the responsibility of the organization (Thaief and Baharuddin, 2015). When an employee does not meet the expected criteria's, improving those criteria's is necessary. Training is a process which helps the employees to reach the criteria's. Training is not only for underperforming employees, it is for those who could perform much better by improving skills, knowledge and techniques. Training employees has always yielded a positive result (Thaief and Baharuddin,2015). Construction professionals get demotivated easily due to the construction environment, quality of morale, work-life balance, non-recognition (Smithers and Walker 2000), which affects the performance. Understanding individual needs, addressing and motivating them is a sign of good leadership. Effective communication is one of the key parts of motivating employees. Recognition in the organization has always been overlooked, which could be effective and inexpensive. Luthans (2000) suggested the appraisers should give attention to recognition. Increase in the compensation, change in management style is added factors to increase the performance (Smithers and Walker 2000).

2.4 PPA methods

PPA evaluation method is not the same for every organization. It depends on the nature of organization and type of work executed. These methods have their

advantages and disadvantages, which are discussed below; however, it is at the discretion of the organizations to choose the evaluation methods. Evaluation methods are classified into traditional and modern methods; performance-oriented methods and judgmental methods; scaling methods, narrative methods; comparative, rating, narrative and behavioural methods. According to Kateřina et al. (2013) traditional and modern methods cover all forms of evaluation methods. In this study, performance evaluation methods have been classified as traditional and modern methods as mentioned in section 2.4.1 and 2.4.2. Traditional and modern methods have been discussed by various authors (Cintrón and Flaniken 2008; Lunenburg (2012); Aggarwal and Thakur 2013; Khanna and Sharma 2014; Shout and Yousif 2014; Singh 2015; Verma 2014; Dagar 2014). Few common methods are found to be:

2.4.1 Traditional methods

2.4.1.1 Rating scales method or Graphic rating scale method

This is simple and common method to evaluate the performance; as an alternative to rating scale, graphic rating scale is used. In this method, employee is assessed on the subjective measures such as quality of work, knowledge, behavioural traits, attitude, initiative, dependability etc. The scale may vary 5 to 7 point scale, in which appraiser have to assess the performance based on the rating scale. Advantage of this method is simple, it is easy to understand, identifies best and poor performers, but this method fails to differentiate average performers. This method cannot be applied when the employees are more in number.

2.4.1.2 Checklist method

In this method, descriptive statements are made about job and personal traits, employee performance and the list of these criteria are made that is met by an employee. Evaluation is done by recording the responses in the form of ‘Yes’ or ‘No’. Based on the number of positive checks, employee performance is evaluated. This method is easy to evaluate and it is easy to administer the checklists. This is considered to be time-consuming, requires trained personnel to prepare questions or statements.

2.4.1.3 Critical incident method

A logbook is maintained by the appraiser, to note the effective and ineffective behaviour of the employees. Incidents arise at workplace and the employee's behaviour towards is noted. Critical incidents are recorded and based on such situations employee is evaluated. This is based on human behaviour at a particular incident which affects job performance. This may be a positive or negative effect on performance. Negative side of the employee is easily noticed in this method. This method is time consuming and requires experts. It majorly depends on the appraiser to mention the incidents.

2.4.1.4 Behaviourally Anchored Rating Scales (BARS)

As the name indicates employees get evaluated based on the behaviour. In this method employee's particular behaviour is evaluated against certain incidents. In short, it's a combined method of rating scale and critical incident method. This method is considered to be useful and accurate but it is very difficult to develop and identify good behaviour.

2.4.1.5 Field review method

In this method, employees get evaluated by personnel from HR department rather than being evaluated by immediate superiors. HR personnel would evaluate based on weakness, strengths, work progress and behaviour of an employee. This evaluator takes detailed notes of an employee from his manager and the same is added to employee's file. Also, appraiser qualitatively assesses the employee. This method is more of objective type assessment and focuses on the employee's work. This method is useful when the work is of similar nature and could be compared. Disadvantage of this method is that personnel from HR may be unaware of work environment and nature of work.

2.4.1.6 Essay method

This is entirely a qualitative method, where the appraiser has to describe employees' strength and weakness, behaviour, qualification, capabilities, need of training etc. in the form of essay. This method helps to collect a lot of information about the employee. Appraiser is not restricted to evaluate on particular qualities. This is a tedious process and appraisers are expected to have good job knowledge and also

good at writing essays.

2.4.1.7 Cost accounting method

In this method, the difference between cost incurred for an employee (which includes, compensation, recruitment, induction, training cost etc) and his contribution to the organization (total value added in his presence or absence) is considered for evaluation. The contribution of an employee should be greater when compared to cost incurred on him for a good performer.

2.4.1.8 Comparative evaluation method and Paired comparison method

This method is a modified version of the ranking method. In this method, each employee gets compared with peers. Personal traits and work dimensions are compared with each other. The result is calculated based on highest score. Paired comparison method evaluation is similar to comparative analysis but it is conducted for two employees. Rating is done for all pairs and ranking is given by the superior. It overcomes when there is a problem to differentiate between the employees.

2.4.2 Modern methods

2.4.2.1 Management by Objectives (MBO)

This process is frequently used for managerial and administrative purpose and is also called as Result Oriented Appraisal. The employee along with his supervisor sets goals for himself, which he can fulfil along with an organizational objective. While setting goals, it involves negotiation between supervisor and employee; however, the goals are subjective whose outcomes will be measurable. Based on the outcome, employee would be evaluated. Here, individual traits are less considered and focuses on accomplished goals rather than the means used to accomplish them. This method has more clarity in goals through communication between appraiser and appraisee; it also helps in motivating the employees and their personal development. Limitation of this method is that it involves lots of paperwork, prioritisation may create problem and long-term performance may be overlooked.

2.4.2.2 Psychological appraisals

It is executed on the basis of employee's emotional, intellectual, motivational, personal characteristics, sociability, the ability to respond for the foreseeable

conditions, reasoning skills etc. which influence the job performance. It is executed in the form of psychological exercises, interviews, review of his work progress and its evaluation, discussion with supervisors. This method is time consuming and expensive. The psychologists predict the employee's future performance and this would help the employee's career planning, training etc.

2.4.2.3 Assessment centres

This method is conducted after initial selection process to understand how employees react for different situations. Managers from various departments gather together and job performance related exercises are carried out, which are then evaluated by trained observers. This method is mainly focused on observation of human behaviours based on a series of exercises, work samples etc. This method provides a fair opportunity to all the employees to improve their performance, also to take fair HRM decisions. This method is lengthy, time consuming and require more manpower.

2.4.2.4 360 Degree feedback

This method aims to obtain feedback of an individual employee from every aspect. In this process, performance feedback data is systematically collected from various stakeholders (supervisors, colleagues, customers, peers, and self-etc.) of the organization. This method is also called a Multi Rater Feedback System. From this, an employee will get to know the perception of co-workers towards him and his work. This is considered as most effective method. Major disadvantage of this method is getting feedback from every source which may be intimidating for employees.

2.4.2.5 720 Degree feedback

This is same as 360 Degree feedback except that it is practiced twice. Once the 360 Degree feedback is carried out and once again supervisor or manager come together with the employee and give him feedback based on the 360 Degree feedback to improve his skills, performance etc.

2.5 Criteria for effective PPA systems

The objective of PPA is to clarify the roles and responsibilities, which in turn help the organization's performance (Boice and Kleiner 1997). Adaeze (2014) has listed the PPA's benefits for both employee and organization.

For an employee

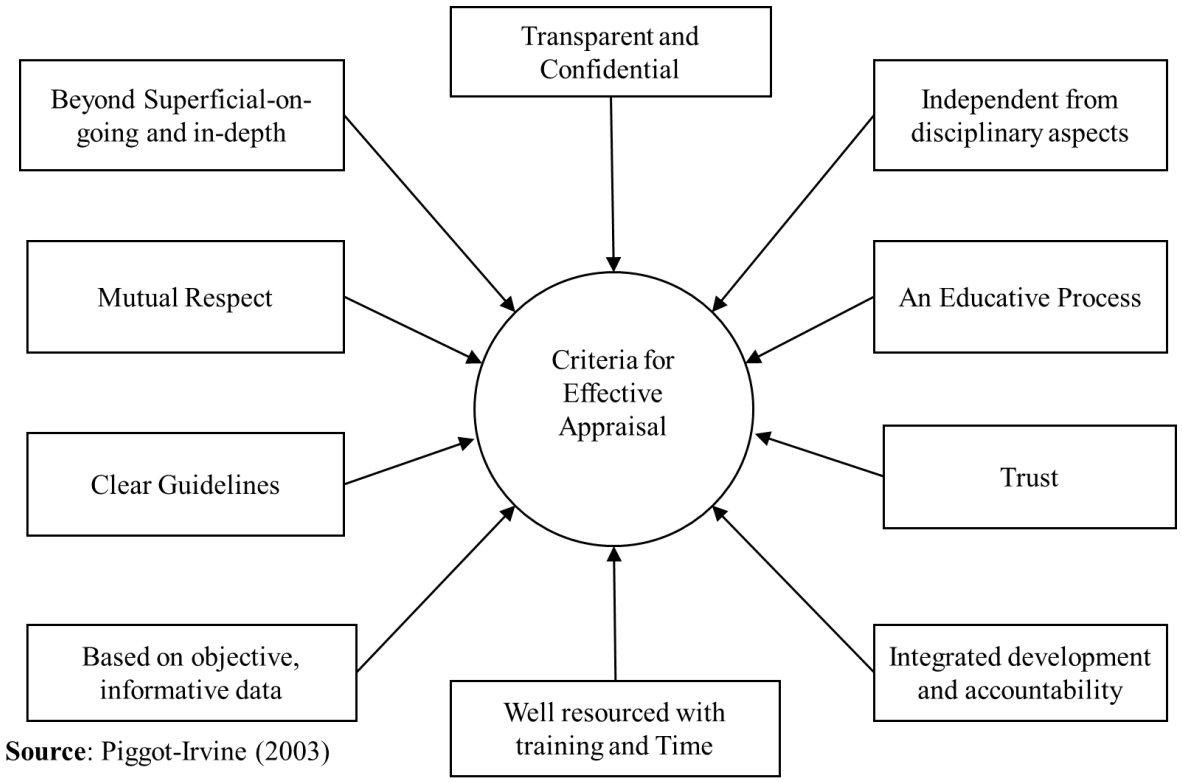
- It increases morale
- Hidden talents will be known
- Boosts motivation
- Helps in career development.

For organization

- Maintains positive relationship between employee and management.
- Creates awareness in management about strengths and weaknesses of an employee.
- PPA documents serve as a basis and will be helpful in the further appraisal process.

An effective PPA system depends on several factors/aspects. This section briefly summarises the various factors that have been suggested/discussed for the effectiveness of PPA system by different researchers.

The appraisal process should be independent of disciplinary aspects, educative, trustable, well-resourced with training and time, based on objectives, informative data, transparent, and confidential. Piggot-Irvine (2003) recommended giving prominence to development and accountability, clear guidelines and mutual respect. These criteria's should be practiced between appraiser and appraisee for achieving better results.



Source: Piggot-Irvine (2003)

Figure 2.1 Criteria for effective appraisal

Caruth and Humphreys (2008) discussed the 11 essential characteristics of performance appraisal. PPA system should consist of formalization, job-relatedness, standards and measurements, validity, reliability, open communication, trained appraisers, ease of use, employee's accessibility to results, review procedures and appeal procedures.

Monitoring the whole appraisal system is imperative. Quality of performance dimensions, performance reviews, usage of results, monitoring the appraiser, social relationship between appraiser and appraisee, feedback to the appraisee are essential aspects outlined by Martin and Bartol (1998) to maintain the effectiveness of PPA system.

A conceptual framework was proposed by Ikmurallh et al. (2016) for the effectiveness of PA system. This framework consists of four quadrants, namely 1) Human Relations Model; emphasising on appraisee participation, employee development, coaching and counselling. 2) Open System Model emphasising on flexible performance targets, role-definition purposes and stakeholders' satisfaction. 3) Internal Process Model

emphasising on assigning a qualified appraiser, regular performance feedback, access to appraisal-related information, appraisee's voice, and rating format. Finally, 4) Rational Goal Model which focuses on planning, goal setting and efficiency.

Considering all these aspects may be useful. However, on the other side, managers', employees' and employer's opinion plays a vital role while designing PA system (Cintrón and Flaniken 2008). Also, PA system should be fair, objective and satisfactory (Cielk 2014). Ineffective PPA system would lead to severe issues between appraiser and appraisee. An effective PPA system must consist of effective PA design, where it acts as a foundation of PPA system and managerial appraisal practice and results in better output. Lastly, support from the top management is important for the success of PPA system and it would minimize the criticism and improve the performance of the system (Longnecker and Flink 2017). Longnecker et al (2019) explored the current trends of performance appraisal systems based on longevity of process, multi-dimensional purpose, equipping people for successful appraisals, people involved in the rating process, technology and frequency.

2.6 Frameworks related to PPA

Denisi and Pritchard (2006) developed a framework (Fig 2.2) based on the context of motivation model for individual performance. It gives the link between the employee's action to satisfaction which involves the results, and its evaluation and outcome. With the intention of motivation, the framework gives the process and criteria's that should include during appraisal. This framework suggested including clear statements of standards and expectations so that everyone can be involved in the process. It also suggested informal feedback and appraisal as regular part of the system. This framework is more focussed on process of appraisal and feedback to induvial that would lead to the improvement of performance.

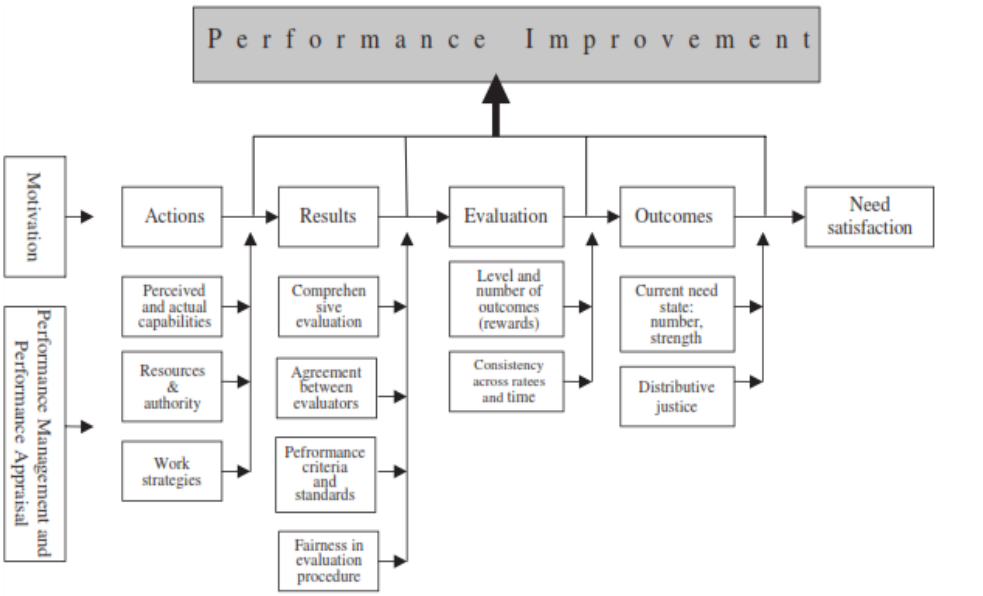


Figure 2.2 Performance improvement framework

Armstrong (2006) established a framework (Fig 2.3) for performance development. This framework is with respect to performance management, but it is similar to performance appraisal practice. It indicated the three main factors to be considered while implementing the performance management system. According to this framework before carrying out the PM practice, contextual factors i.e. culture, and management style and structure need to be considered. It includes 10 stages of performance management practices which include to be carried out in an organization. This framework is generic to any organizations; specific dimensions, evaluation methods, are found to be missing.

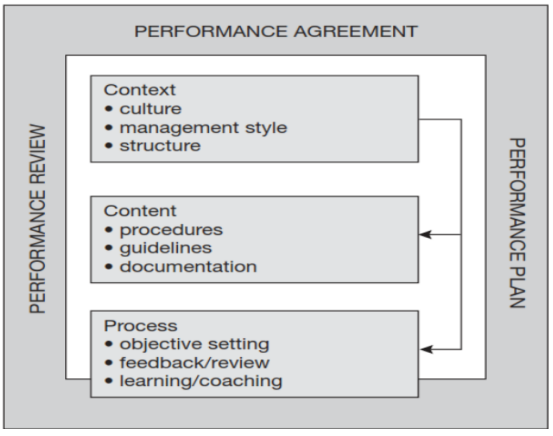


Figure 2.3 Performance development framework

The frameworks related to PPA mostly describe the generic process that is suitable for any organization also mentioned benefits for employees, organization. Loosemare et.al (2003) provides the PPA process related to construction projects.

2.7 Shortfalls in PPA

Different approaches of PPA methods to measure the performance, which is commonly used in the organizations, are discussed in the previous section. Each approach has its own advantages and disadvantages and there are no right and wrong approaches. The right way of execution and usage of any approach makes a successful PPA system (Ahmad and Bujang 2013). While executing the PPA there are several factors that hinder the whole system and directly or indirectly affect the employee performance. Below Figure 2.2 shows causes of shortfalls in the system.

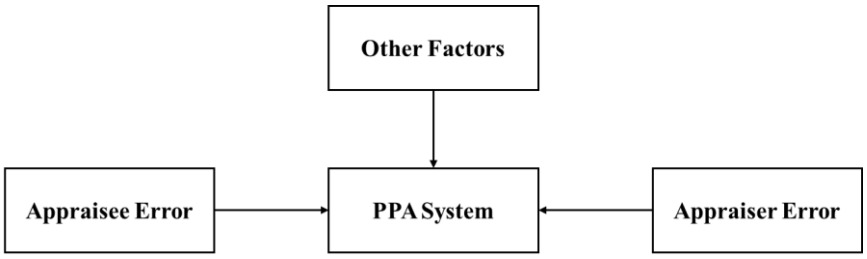


Figure 2.4 Causes for performance shortfalls

2.7.1 Appraiser error

Generally, when PPA system is considered, often errors caused by appraiser are emphasized (Arvey and Murphy, 1998). Error caused by the appraiser has grabbed many researchers' attention and several studies have been done in this area. Many researchers repetitively noticed common errors or issues which have arisen in the organization by the employers or appraiser in different studies described below.

Table 2.3 Appraiser errors

ERRORS/ISSUES	DESCRIPTION
Halo effect and Horn effect Arvey and Murphy,(1998)Mensah and Seidu (2012), Erbasi et al. 2012, Esfahani, et al. (2014) Lunenburg (2012), Dipboye, R. L. (2018).	Appraiser rates employee beyond their abilities without knowing their actual ability i.e. based on a single personal trait. By observing one single positive job performance dimension employer assumes that employee has fulfilled all criteria's. Horn effect is contradictory to Halo effect. Though employee has met all performance criteria except one or two performance dimension, the employer assumes that employee has not fulfilled any criteria.

Leniency and strictness effect Arvey and Murphy,(1998), Erbasi et al. (2012), Lunenburg (2012), Grund and Przemeck (2012) Esfahani, et al. (2014), Dipboye, R. L. (2018).	Appraisers do not want to harm the appraiser and appraisee relationship. This attitude ends up being lenient towards subordinates. Due to strict nature of an appraiser, employee gets under evaluated than what his actual performance is.
Central tendency effect Erbasi et al. (2012), Lunenburg (2012), Grund and Przemeck (2012) Esfahani, et al. (2014), Dipboye, R. L. (2018).	This also called as an average tendency or standard measurement error. Some appraiser having the tendency of giving an average rating for all employees whether they performed well or not, they get average ratings because the appraiser lacks knowledge about the employee and also appraiser tries to avoid the wrong decision. This affects adversely on employees who had performed well and vice versa.
Similar to me effect Mensah and Seidu (2012), Esfahani, et al. (2014), Erbasi et al. (2012), Lunenburg (2012) Dipboye, R. L. (2018).	Appraiser feels that employee is of similar nature to self or resembles the evaluator in his work. Employees also contribute to this kind of errors by portraying themselves as similar to their superiors, or by showing similar behaviour as the appraiser.
Recency effect Esfahani, et al. (2014), Erbasi et al. (2012), Lunenburg (2012) Dipboye, R. L. (2018).	Appraiser concentrates on recent performance for appraisal purpose.
Ethical dilemmas Banner, and Cooke (1984)	Different types of ethical dilemmas faced by appraiser in performance appraisal process such as dilemma while evaluating the employee, dilemma about performance dimensions, dilemma about the end results.
Employee relationship Longenecker (1997), Varma et al. (2005), (Grubb 2007).	Human tendency is to create a self-image in front of everyone and this might create conflicts among the employees at many levels such as conflicts between employees, employee- supervisor conflicts, conflicts between supervisor and organization management, which may directly or indirectly influence the appraisal.
Shortage of Supervisors Cintron and Flaniken (2008).	There has to be adequate number of appraisers for the given number of employees. Shortage in the number of appraisers can affect both the employees and the appraisal process.
Lack of Performance Dimensions Longenecker (1997)	Setting up of performance dimensions for the employees is a big task. These dimensions are used to measure the performance of an employee. While developing performance dimensions, employers should know about their employees, type of work, its pros and cons, so as to develop effective performance dimensions. This performance dimensions have to be communicated to employees as well.
Mood of the Appraiser Fletcher (2001).	Appraisals are likely to get affected by the mood of the

	appraiser While evaluating the employee mood of the appraiser is unpredictable and it can lead to the errors in performance evaluation
Communication Rizzo et al. (1970), Longenecker (1997)	"If an employee does not know whether he has the authority to decide, what he is expected to accomplish, and how he will be judged, he will hesitate to make decisions and will have to rely on a trial and error approach in meeting the expectations of his superior". It clearly indicates that communication between employer and employee is necessary.
Lack of positive feedback Longenecker (1997), Aguinis et al. (2012)	During review process, positive feedback has resulted in better performance. In some cases, appraiser tends to carry the negative baggage about past performance resulting in negative feedback, which in turn decreases the employee morale.
Lack of focus on personnel development Longenecker (1997)	Most of the organizations focus on their personnel development; however, it depends on the appraiser input. If appraiser fails to notice the need for training, mentoring, then the intention of PPA system will not serve its purpose.
Demographic Effects Dipboye, R. L. (2018).	a) Age: Older employees are rated less compared to younger employee b) Gender Bias: Discrimination between men and women c) Ethnic Bias: Racial discrimination .

2.7.2 Appraisee error

PA system is substantially considered as a benefit for organizational development. According to Kim and Holzer (2016) only some studies found a negative reaction from both Appraisers and Appraisees. Appraisee error as the name suggests errors caused by the appraisee or the employees. Unlike appraisers, appraisees anticipate rewards, recognition from the PPA process. When the system does not meet their expectations the errors could be found. The errors are further classified into reaction and motivation towards the appraisal process (Levy and Williams 2004). Below are the few errors caused by the appraisees which affect the PA system. Sometimes these errors are chain-linked with the system and appraisers.

Acceptance: One of the main constituents of the appraisal process is accepting the appraisal process. If the appraisees feel that PA as a controlling or commanding process, they might lose hope in the system (Robert 1998).

Knowledge: Employee's knowledge about the process plays a major role in satisfaction or dissatisfaction (Levy and Williams 1998). Robert (1998) came across a lack of ability to read and understand the appraisal form during the process. He suggested identifying those employees and providing adequate interventions.

Participation: Various reasons such as lack of communication, unfair evaluation, and biased evaluation have led employees not to participate in the appraisal process Roberts (2003).

Trust issues To achieve the goal of an organization successfully, every employee has to come together and work as a team. To work as a team, trust among the appraiser and appraisee plays an important role. Trust issues among appraiser and appraisee could lead to dissatisfaction and appraisee may not accept the feedback(Levy and Williams, 2004).

Dissatisfaction (Ahmad R. and Bujang S. 2013; Tziner and Kopelman, 2002): The main causes are performance evaluation not being fair, quota system, criticism from the appraiser; appraiser does not have sufficient knowledge and skills which lead to the Personal bias. Satisfaction is not confined to the job, it also relates to appraiser and appraisee satisfaction for the overall PPA process. If they are dissatisfied with the process, PPA loses its importance. Dissatisfaction about the process has always ended up in unfairness in practice as inferred by the employees (Shrivastava and Purang, 2011).

2.7.3 Other factors

Performance appraisal systems need to be customised according to the organization culture, organization contextual dimensions. Contextual factors at organizations level such as organization policies, organizational goals, human resource strategies, external economic factors, technological advances and workforce composition which influence the appraisal systems (Levy and Williams 2004; Rusu et.al 2015). Organization culture/climate can support or discourage discrimination of employees based on age, race, and gender during appraisals (Dipboye. 2018).

In some cases appraisers/appraisees use appraisal system for their own advantage (in a negative way), intentionally manipulating others ratings, which creates unnecessary

issues between the employees. These kinds of politics are observed in most of the organizations (Longenecker et al. 1987). Recognition is one of the motivational keys for an employee. Office politics is one of the reasons for not recognizing the deserved employees and causes dissatisfaction and demotivation to the employees. Sometimes to have power in the organization, appraisal becomes the weapon against the employees (Dipboye. 2018).

Other factors influencing the performance appraisal are gender biased rating, age-related issues and inaccurate rating. Also, appraisal process influenced by nonverbal factors such as knowledge, experience, relationship with employees, appraisal time, purpose, objective of the process and characteristics of an employee have high impact on appraisal (Clement 1987).

No process or system is an exception from criticism. From literature it is found that some researchers criticized the whole system; Deming (1986) argues that PPA system has a negative effect on the organization and he/she desires to have appraisal system for team or department rather than appraising an individual. Grub (2007) argues that performance appraisal system should be ended because of reasons such as PPA being harmful to the interpersonal relationship between employees and employer. According to Grub (2007) dislike of PPA system by employees has adverse effects on their performance.

However, it is difficult to end the whole system unless another mechanism evolves. In the absence of an alternative system, steps can be taken to reduce errors and increase its effectiveness.

2.8 Perception of employees towards PPA system

When an organization changes its policies and rules, the outcomes of PPA system impact the employees. The PPA process can have a positive impact or negative impact on the employee and the way it is perceived. The impact shown could be in the form of reaction towards work or appraiser or team or organization as a whole. The reaction of employees indicates the potential acceptance of PPA system (Kavanagh et al. 2007).PPA system is not perceived as effective unless it is fair and satisfactory for the employees (Cook and Crossman 2004). Perceived fairness can be motivator to the

employees. According to Kavanagh et al. (2007), when the system is biased, irrelevant or is infused with politics, it can be a source of frustration and discontentment (Skarlicki and Folger 1997). Appraiser's neutrality, participation in the process and knowledge of PPA system has significant impact on appraisal fairness. By incorporating these practices in the PPA, appraisers are likely to develop positive opinion about the process among the appraisees (Kavanagh et al. 2007).

2.9 Summary of Literature

Literature review reveals that PPA system is used for employee retention; improving their performance and also for administrative decision making purpose in the organization. There are a few theories which explain the complex mechanism and human behaviour related to PA. They also highlight upon the employees' and employer's expectations, goal setting and rewards or benefits. The theories also established how behaviour of employee's and employer's influence each other and ways to modify these behaviours. They also focus on how fairness of the PA system is perceived.

Several studies have been conducted generalising the PPA systems, errors caused by appraiser, appraisee and various contextual factors hindering the PPA systems. With reference to CI the PD's were defined only for few designations. The studies have not been carried out the PPA as a whole system in the construction context. Considering the comprehensiveness of PA from previous works the research should focus on employee performance appraisal system. Recent literature indicates that research focus should extend to PDs in CI. Thus an approach to PPA in CI context signifies a powerful strategy for HRM practice.

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CHAPTER 3

RESEARCH METHODOLOGY

This research is initiated with the purpose of understanding HRM practices and their outcomes in the CI. HRM is a broad area and this research focuses mainly on job performance appraisal process, KPDs for job performance appraisal, and overall shortfalls in the system. This chapter gives an outline of the research design, research approach, study population, sampling method, data collection methods, and data analysis.

3.1 Research Design

The research design is the systematic study of a problem with relevance to research and its objectives adopted by the researcher (Kumar 2010). A good research design should have a clear problem statement, methods used to collect the data, nature of population, techniques or methods used to analyze the data, in short, the research design is needed to simplify the research and to have a smooth conduction of various research operations and making research as efficient as possible (Kothari 2009). However, a design entirely depends on the type of problem and the suitable approach adopted for the study.

3.2 Research approach

Neuman (2014) classified the types of research into a) Exploratory Research b) Descriptive Research and c) Explanatory Research. Other than these four types Hypothesis-testing research also known as experimental studies and it was mentioned by Kothari (2009).

- *Exploratory Research*: Exploratory research is used where the problem is uncertain and less attention has been given to it. This method has to be flexible so that it can provide a different aspect of a study and determines the limitations for future research; generate new ideas that would lead to refined research (Neuman 2014).

- *Descriptive Research:* This study is used to describe an individual or a group. This method is used to narrate a phenomenon more in detail, with explanation, reason, situation, or relationship.
- *Explanatory Research:* This method is built on exploratory and descriptive research methods. The initial step is to find the reason for the problem and explain it in and around the concept.
- *Experimental Research:* In this method, a hypothesis is tested for causal relationships between variables. This method will minimize the bias and increase reliability (Kothari 2009).

PPA is a little investigated area in Indian CI context. Here in this study focus is on understanding the PPA concept in general and further investigating the same in CI in a specific context. Therefore the exploratory method is found to be suitable for this research, as this provides flexibility to explore little known parts of a particular study.

A researcher needs to consider the type of research, research approach, data collection, data analysis that suits the study requirements. Research methods are categorized into a) Quantitative approach b) Qualitative approach c) Mixed-methods approach (Creswell 2014).

3.2.1 Quantitative approach

Quantitative approach is rigid, and the data is collected in terms of numbers or values. Here the method is structured, carefully designed and data is collected through structured research instruments (Kumar 2010). Data can be collected in two ways i.e. by survey and experimental methods (Creswell 2014). The study can be replicated, reproduced when applied to different population. Usually, the data is analyzed through statistical methods. Findings from this method can be generalized to that sample population.

3.2.2 Qualitative approach

Qualitative approach is flexible and the data collected is in the form of opinions, interviews, observation, documents, and discussions (Kumar 2010).Qualitative approach tends to explore unknown facts, data, or information, clarify the situations, perceptions, experience of people in depth. This type of study is flexible in nature, and it explores the whole subject instead of a particular topic. Interviews are

categorized into structured interviews or focused interviews, semi-structured interviews, unstructured interviews. Observation is the method of collecting the data through the researcher's witness. Document analysis or review is another method to collect the data in a qualitative approach; it involves skimming, reading, and interpretation (Bowen 2009).

3.2.3 Mixed method approach

Each approach has its strength and weakness; balancing both and achieving a good result is essential. Mixed method approach is integrating both qualitative and quantitative approaches and consists of both qualitative and quantitative data. It would help to overcome the limitation of each method and triangulation of results could be achieved. This method is used to explore different perspectives. Christ (2009) expressed that "mixed methods are more than mere methods; it also consists of quantitative and qualitative research. This means that mixed methods incorporate paradigms and philosophical assumptions, theoretical perspectives, as well as research questions and interpretations. In short, mixed-methods encompass the totality of all phases of research and not just the methods". Abowitz and Toole (2009) suggest that mixed method is more suitable for construction research, which involves human factors and human behaviours.

Creswell (2014) classified mixed methods into three different basic categories based on the timing of data collection, results, analysis namely a) Convergent mixed method, data will be collected quantitatively, qualitatively and analysed separately. Results will be compared to confirm or disconfirm the findings. b) Explanatory sequential method, quantitative data will be collected first, based on that result qualitative phase will be built. c) Exploratory sequential methods, qualitative data is collected at the initial stage, based on the results quantitative stage will be carried out.

This study adopts the Convergent mixed method approach, found to be appropriate based on the objectives and nature of the study. Triangulation method is used to confirm the results. It refers to using more than one particular research during research to robust the study or to confirm the research results (Wilson 2014). Triangulation method classified as Data triangulation, Investigator triangulation,

Theory triangulation, and Methodological triangulation. Data triangulation is triangulating data from various sources such as data from different places, time, people who could be part of the study. Investigator triangulation is comparing the researchers on a particular concept or issue. Theory triangulation is approaching data with multiple theories. Methodological triangulation is using more than one method to gather the data (Hussein, 2009). To boost the validity of results triangulation is used.

3.3 Research approach adopted for the study

The main aim of the study is to explore different aspects of PPA systems in construction contracting organizations. The study adopted a mixed-method approach to achieve the objectives. Figure 3.1 shows the mixed methods research methodology adopted for the study.

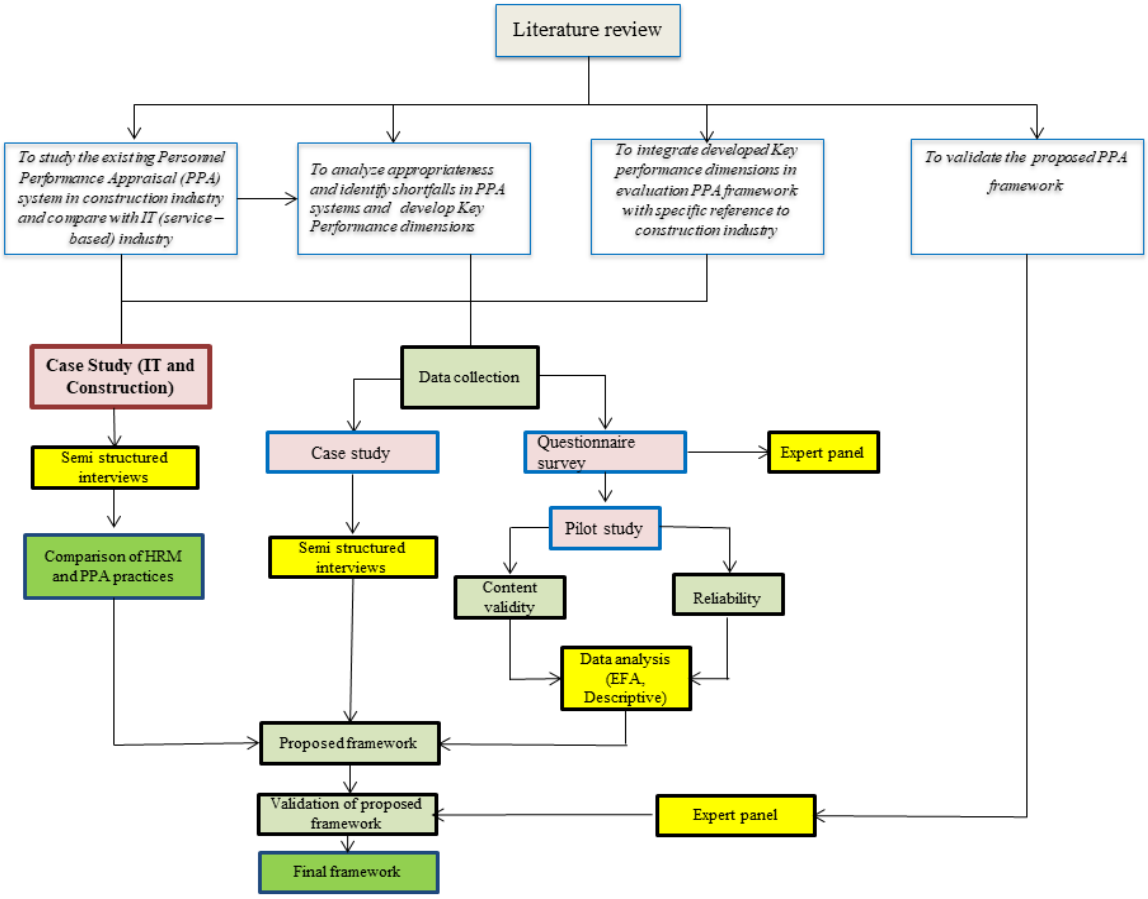

Figure 3.1 Research methodology

As per the above discussion the research design adopted is given below.

Objective 1: To study existing PPA systems in CI and compare with IT industry

The literature on PPA systems gave a fair idea about the current scenario of PPA in different industries. A comparative case study is conducted between a construction contracting organization and an IT (service-based) organization. Both organizations are project-based organizations. Semi-structured interviews are conducted in the context of management practices, PPA in particular.

Objective 2: *To analyse appropriateness and identify shortfalls in PPA systems and develop Key Performance Dimensions*

This objective is divided into two parts

a) To analyse appropriateness and identify Shortfalls in the PPA: With reference to the first objective of the study, the need for improvement in the PPA in CI was identified, further, regarding a structured questionnaire is framed to explore the shortfalls. Descriptive statistics and semi-structured interviews are utilized to identify the same. Mean and standard deviation is used to understand the employee perceptions. Case studies used semi-structured interview approach. Semi-structured interview allows the interviewee to respond freely. From both approaches shortfalls such as the interrelation effect, lack of transparency were identified
b) Key Performance dimensions: The major part of the PPA process is identifying and establishing PDs. Exploratory Factor Analysis (EFA) is used to identify PDs and semi-structured interview supplemented the same. PDs from EFA and semi-structured interviews were mapped into three levels i.e. Decision maker, Coordinator, and Technical Cadre level

Objective 3: To integrate developed Key Performance Dimensions in PPA framework

Further from literature, questionnaire survey results, and case studies, a PPA framework is developed and proposed. The identified performance dimensions were integrated into the framework.

Objective 4: To validate the proposed PPA framework.

A structured questionnaire is utilized to check validity. The proposed framework is validated by construction professionals who have experience more than 20 years in CI. This is to ensure for the effectiveness, appropriateness, reliability, and understandability of the proposed PPA framework.

3.3.1 Quantitative approach adopted for the study

The quantitative approach utilized a questionnaire survey for this study. Questionnaire survey is one of the most common and inexpensive methods used by the researchers. It is the easiest method to reach many people simultaneously. It offers anonymity where respondents can express their views without hesitation and are more likely to get accurate information. Questionnaire survey is a general strategy to understand the respondent's belief, opinions, and experiences. Questionnaire survey is widely used in research (Blaxter et.al. 2008; Kumar 2010; Creswell 2014; Kothari 2014). The most crucial part of the research is the development of the questionnaire**.** Clarity of the questions, response rate, and answers influenced by others might affect the survey. However, a questionnaire with clarity and asking respondents to express their own experience, reminders would help the researcher to get better responses.

3.3.1.1 Development of questionnaire

The designed questionnaires consist of four sections, a) General information ii) Nature of PPA process iii) Shortfalls in the PPA system iv) Performance Dimensions (PDs). The below table shows the references to frame the questionnaire.

Table 3.1 Questionnaire source

	Section	Reference
1	General information	----------
2	PPA system	Loosemare et.al (2003), Obisi(2011)
3	Shortfalls in the system	Rizzo et.al (1970); Banner, & Cooke (1984); Arvey and Murphy,(1998); (Tziner and Kopelman, 2002); Roberts (2003);(Grubb 2007); Cintron and Flaniken (2008);Mensah and Seidu (2012); Erbasi et al. (2012); Bujang S. (2013) Esfahani, et.al (2014).
4	Performance dimensions	Abdel-razek (1997);McFarland (1994) Hanna and Brusoe (1997);Jha and Iyer (2006);Dainty et al.

		(2004);Cox et al (2005);Cheng and Li(2006);Dainty et al. (2003);Odusami (2002),Cheng et.al (2007),Mouchi(2011), Madter et.al (2012) .

- The first section seeks personal information of respondents and their experience in PPA process. Personal information includes experience of the respondents, designation of employees, nature of the job, number of employees and company's turnover. It has one open-ended question about the respondent's roles and responsibilities.
- The second section is about the implementation of PPA process in an organization. This section sought employee's knowledge and about the appraisal system. All the questions are close-ended questions with multiple choices.
- The third section consists of questions related to the errors/issues caused by the appraiser, appraisee, and challenges in the PPA system. This section is intended to know about the employee's experience with the present PPA in their organization. An open-ended question is asked about the challenges faced by respondents during PPA.
- In the fourth section, a critical review yielded a list of PDs based on personal traits, skills, and with respect to different designations in the construction organization. There are several studies like Koopmans et.al (2014), Dipboye (2018) that primarily focus on identifying the generalised dimensions. A few studies like Jha and Iyer (2006), Mouchi (2011) focus on particular designations in CI which could be used to evaluate employee performance. However PD's at all levels have not been addressed.

  In this regard, a total of 63 factors are identified from the literature review, and these factors are utilized in the formulation of the questionnaire survey. Furthermore, a pilot study is conducted to check the clarity and comprehensiveness of the questions formulated and the relevance of the identified factors suitable for this study. As a result of the analysis of the pilot survey, the questionnaire is taken through a process of revision to make it more suitable for the main questionnaire survey. This resulted in 49 dimensions which are then utilized for conducting the main survey. This

section consisted of an open-ended question about other PDs which are important and not mentioned in the questionnaire.

Overall the length of the survey is kept as short as possible, which would take an average time of 20 minutes.

3.3.1.2 Scale of measurement

The nature of the PPA process section consists of close-ended questions; Multiple choice questions are framed based on the PPA process, as mentioned by Loosmere et al.(2003) and Obisi (2011). From extensive literature, the shortfalls are identified and asked in the form of statements. Respondents had to indicate on a Likert scale measuring from 1 to 5; where, 1 indicated strong disagreement, 2- disagreement, 3- neutral, 4- agreement and 5- strong agreement. Likert scale is considered as most reliable, able to identify the difference between the responses, easy to construct and easy for the respondents to respond (Kothari 2009).

Total of 49 PDs are finalized from the available literature and pilot study. Respondents had to mention the importance of parameters in the appraisal on a Likert scale measuring 1 to 5. 1 indicated not important, 2- less important, 3- neutral 4- important, and 5-very important. Usually 5 points Likert scale is preferred to know the opinion. A study showed that 5 and7 point Likert scale gives the same mean score (Dawes 2008).

3.3.1.3 Pilot Test

A critical review of the literature yielded a list of shortfalls and PDs and they were scrutinized with the help of construction professionals in the context of Indian Construction Industry. Based on the feedback, a questionnaire is framed, and content is validated with the help of construction professionals and academicians to make sure questions meet the research objectives.

The main aim of the pilot study is to check the potential flaws in the research design and familiarize with the procedure before starting the questionnaire survey and also to minimize the errors in the questionnaire (Hassan et al. 2006). Many researchers recommended pilot study for the questionnaire survey as preliminary stage (Ranjith 2011, Kothari 2004). In pilot testing, respondents had

to answer the following questions other than the questionnaire.

a) Are questions readable?

b) Is there any question that is not clear to the respondent?

c) Are questions relevant to the topic?

d) Time taken by the respondent to complete the questionnaire

e) Is there any question to be changed or reframed?

f) Any suggestions/Comments

Table 3.3 Pilot test summary

Sl.No	Section	Suggestions/Comments	Remarks
1	General information	No Comments	----------
2	Nature of PPA Process	Respondents were not clear about appraisal method followed in the organization.	Removed the question.
3	Shortfalls in the System	a) Discrimination of Women against Men	Not Considered (considered as bias)
4	PPA Dimensions	a) Negotiation skills	Already Mentioned
		b) Training and development	Found to be inappropriate
		c) Attentiveness	Mentioned as timely responsiveness
		d) Supportive	Considered
		e) Freedom	Found to be inappropriate
		f) Effort	Considered

In pilot study, respondents required minor clarifications such as interchange of question numbers, the need for employee numbers in the organization, and the researcher clarified the same. Respondent suggested removing the question about appraisal method and mentioned that employees might not be aware of appraisal method's name in particular. Section 3, one of the 33 respondents suggested that, adding discrimination of rating between men and women. The suggestion was not

considered because it would be regarded as a bias of the appraiser and already stated in a different form. Apart from the dimensions mentioned in the questionnaire few PDs were suggested by the respondents. Dimensions such as supportive and effort were considered as positive traits towards work. Negotiation skills were already mentioned in the questionnaire. Attentiveness was mentioned as timely responsiveness. Freedom, training and development are not considered as dimension or attribute to evaluate an employee. Training and development is given after the performance evaluation, hence not considered.

3.3.1.4 Population Sampling technique and Sampling size

The population targeted for the study by means of questionnaire survey were professionals employed in Indian construction contracting organizations with a minimum of 2 years' experience and had undergone at least one performance appraisal. The goal is to reach as many construction professionals as possible from different organizations.

A sample is a finite part of a statistical population whose properties are studied to gain information about the whole (Webster 1985). For this study, non-probability sampling is selected where the population number cannot be calculated precisely. Under this method, purposive sampling is found to be more suitable for the questionnaire survey. Here information or data is collected from those who likely know the information and willing to share it. To understand or to develop something which is less known, this sampling method is more suitable (Kumar 2010). The formula that is used to estimate the sample is given below.

Using a confidence level of 95%, the sample size is calculated using Malhotra and Dash, 2011 as follows: where,

$$N = \frac{Z^2\,(p * q)}{e^2} \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots . (1)$$

N= Sample size

Z=1.96 at 95% confidence level

e = acceptable margin of error for proportion being estimated = 10%.

p= estimated proportion of population that represents the characteristics.

q= 1-p, N= 97

In order to obtain a sample size with a given degree of accuracy, the worst-case percentage picking choice of 50% was assumed as in the study conducted by Ankrah (2007); 95% confidence level was also assumed as in other studies with a significance level of $\alpha = 0.05$; $z = 1.96$ at 95% confidence level; and a confidence interval (c) of ±10% is taken: A total of 528 questionnaires were distributed, and 133 valid responses were received. The response rate is 25% which is reasonable (Oyewobi 2014).

3.3.1.5 Questionnaire administration and collection

An introductory cover letter with an explanation, abbreviations used is attached with the questionnaire and sent through Google Doc for the respondents who were not accessible; the questionnaires were given personally for the selected population. Sufficient time was given to the respondents to respond. Reminders were sent to the respondents to respond.

3.3.1.6 Data Analysis Methods

Different analyses chosen for different sections, based on the objective of the questionnaire i.e. frequency, descriptive statistics (mean and standard deviation), factor analysis.

3.3.1.6.1 Descriptive Statistics

Descriptive methods are used when the researcher does not have any control over the data. It is mostly used to know the frequencies, preferences, opinions, ranking, or to check the similar data. When the question contains more than one response, frequency method is used for section 2, i.e. nature of PPA system. Mean and standard deviation are adopted for section 3 (.i.e. shortfalls in the PPA system). The mean is used in analyzing the opinion of respondents and the standard deviation to measure the variation in an observation of the sample. The standard deviation shows the relation that the set of scores has with the mean of the sample. Mean is widely used to describe the central tendency and to compare different groups mean could be used.

3.3.1.6.2 Factor analysis

“Factor analysis is an interdependence technique whose primary purpose is to determine the underlying structure among the variables in the analysis” (Hair et al.

2010). Factor analysis is classified into Exploratory Factor analysis (EFA) and Confirmatory Factor analysis (CFA). EFA is used to gain insight into the structure of underlying processes that explain a collection of variables. The term structure describes the relationships between latent variables and measured variables. Confirmatory Factor Analysis (CFA) is used when a researcher has a number of well-articulated theories about the latent structure of a set of measured variables and wishes to test how well those models fit the data. In this study, Exploratory Factor analysis method has been adopted for the questionnaire survey section 4 i.e. performance dimensions as it is a data reduction method. This study received 133 valid responses. According to sample size calculations, the number obtained is 97. However to conduct EFA minimum of 50 responses are required, preferably more than 100 responses required for better interpretation (Hair et.al 2014). In the construction industry the response rate for questionnaire survey is low 20%-30% (Oyewobi -2014). The obtained response rate is 25%. This suggests that 133 responses are marginally sufficient for EFA (Hair et.al 2014; Lee and Donhue (2014).

Principal Component Analysis with Varimax rotation is conducted to maximize the variance of the squared loading for each factor that produces a clear factor loading (Hair et al. 2010). IBM Statistical Package for Social Sciences (SPSS) 21 is used for factor analysis. An exploratory Principal Component Factor Analysis is conducted to determine the resultant factors. Appropriateness of data for FA is ensured through Bartlett's test of Sphericity and KMO values. In the present analysis, performance dimensions with a factor loading of > 0.45 only are considered to interpret the factors, as recommended by Hair et al. (2010).

3.3.2 Qualitative approach adopted for the study

Qualitative method is used for broader explanation of attitudes and behavior. Case study method has been chosen for this study. Semi-structured interviews and document analysis are used to collect the data.

3.3.2.1 Case study design and selection of case study

The case study method is appropriate for the exploratory type of study when the intention of the research is exploring than quantifying. The case study helps to

understand the concept and gives in-depth knowledge about it (Ranjith 2011). Rowley (2002) suggested that case study design can be classified into one of two categories, holistic (single) versus embedded (multiple), to reflect the unit of analysis in each case study, and the number of case studies contributing to the design. Multiple case studies are selected because it gives similarities and differences between the cases (Gustafsson, 2017) and result obtained from multiple case studies would be strong (Rowley 2002).

A comparative study between a construction contracting organization and an IT (service-based) organization is conducted through case studies comparison that is based on management practices**.** The organizations were chosen based on the size of the company and their willingness to participate in the study.

The scope of the study is restricted to Karnataka State, India. IT (service-based) case study is conducted in Bengaluru, as most of IT organizations are situated in this city. Construction contracting organizations case studies are conducted in Bengaluru and Mangaluru, Hubli-Dharwad region only because of time and resource constraints. Most of the construction contracting organization's regional offices are situated in these cities. Personnel with a minimum of two years of experience were chosen for the study. The target population includes directors, assistant general manager, senior managers, HR manager, engineers, site supervisors, and technical employees who represented all levels of management.

3.3.2.2 Method of collection of data

This case study adopted to collect data by semi-structured interviews supplemented by document analysis. Here four case studies are conducted based on the organization size and permission obtained by the organizations. The exploratory case study method is adopted for this study.

3.3.2.2.1 Semi-structured interviews

Primary data is collected through semi-structured interviews as it provides flexibility to interact with the respondent and helps to get more information about the topic in detail. Secondary data collected through documents related to performance appraisal were from in-charge personnel.

Semi-structured interviews are conducted with the personnel of construction organizations. The skeleton of questions is framed for the interviews. Face to face interviews are conducted. Some of the interviews happened over the phone, depending on the availability of the interviewee. Main topics are discussed in the construction organizations; a) the present appraisal system and practice and its challenges in the organization, b) performance dimensions being used in the organization to measure the performance. The detailed interview structure is given in the Appendix II. All the interviews are noted, recorded, and transcribed. After all the interviews, the obtained data are summarized and described based on themes.

3.3.2.2.2 Document Reviews

Documents related to appraisal, appraisal policies, performance management documents were reviewed. Document reviews are aimed to identify the factors that played a role in the PPA system. The documents provided by the organizations were helpful to know how PPA is conducted in that particular organization; also it helped raise few questions during interviews.

3.4 Validity and reliability in research

3.4.1 Quantitative Approach

In this study, the impact of response biases is minimized by the following factors:

(1) A careful selection of appropriate respondents (by defining the appropriate study population and its sample size);
(2) Voluntary nature of participation in the questionnaire, anonymity of respondents, and confidentiality of respondents' responses;
(3) Assuring the comprehensiveness and clarity of the questionnaire to avoid unintended error made by respondents through a pilot study;
(4)Respondents were encouraged to review and revise their responses before submitting their responses.
(5) Invalid and unreliable responses (not meeting the required criteria's) were identified and removed from the database. Moreover, the work experience, organizations, and their positions in their respective organizations could enhance the quality and reliability of the data collected.

In addition, the validity of the research findings can be assured by:

(1) Confirming the reliability and validity of PDs before performing any substantive analyses; and

(2) Interpreting the statistical results within an extensive review of the pertinent literature.

These are some of the measures that are taken to enhance the rigorousness/effectiveness of the questionnaire and responses that were obtained from the survey.

3.4.2 Qualitative research

Qualitative data collected are based on the subjective measures and to eliminate subjectivity often several validation methods (ex. Triangulation of results) are used (Oyewobi 2014). Here, the results from interviews, observation documents were triangulated for validation of results. Reliability in qualitative analysis depends on the researcher to cross-check the procedure conducted (Creswell 2014).

3.5 Summary

The study adopted a mixed-method approach to achieve the objectives. Mixed-method consists of qualitative and quantitative approaches. As part of quantitative approach, a questionnaire survey is used as a primary approach. The quantitative approach made use of purposive sampling, which is more feasible for the questionnaire survey. The population targeted for the study by means of questionnaire survey , individuals employed in Indian construction contracting organizations with a minimum of 2 years' experience and have undergone at least one performance appraisal. A pilot study is conducted to measure the reliability of the questionnaire. A total of 528 questionnaires were distributed and 133 responses were received. The data collected were analyzed using IBM SPSS version 21 tool for descriptive statistics and factor analysis.

Case study approach is used as a part of the qualitative method. A comparative study between the CI and IT (service-based) industry is conducted to understand the scenario of the present PPA system. Semi-structured interviews are conducted with IT (service-based) employees, as well as with construction professionals who had

predefined experience from various organizations. Appraisal forms and related documents from various organizations supplemented the data from interviews and surveys. Semi-structured interview analysis is based on PD's, nature of appraisal systems, and shortfalls. Qualitative and quantitative results were combined to develop PPA framework. The framework's appropriateness is validated with few construction professionals having more than 20 years' experience in the industry.

CHAPTER 4

COMPARISON OF PPA SYSTEMS IN IT (SERVICE-BASED) AND CONSTRUCTION ORGANIZATION.

This chapter describes case studies between two organizations of different spheres based on literature review and semi-structured interviews. It consists of a brief review of different sectors in India and attempted to study the nature of different industries with the help of literature. Also, it consists of the study of HRM and PPA practices in CI and IT (service-based industry).

4.1 Different industrial sectors in India, their HRM and PPA practices

There are three major industrial sectors based on the GDP in India namely, a) Agricultural and allied sector b) Industry sector c) Service sector. These cover all the industries in India (Open Government Data). This study aims to understand the nature of different industries which would help to compare them with CI. Based on available literature about HRM and PPA practices of various industries in India in different industries/sectors, the brief has been made.

4.1.1 Agriculture and allied sector

Agriculture and allied sector also called as a primary sector. This is the biggest sector in India, accounts for major contribution to the national economy and one of the largest producers in the world. Majority of raw materials are produced in rural India. An increase in production has led to agro-based industries and generated employment. This industry is considered highly unorganized, product-focused, and highly labour intensive. These industries majorly belong to the sole proprietor (Panda 2015). Agro-processing industries are responsible for the stages of the harvest till end products reach the consumer (Kachru 2010). There are agro-processing industries in India and this chapter reviews a few industries such as the sugar industry. Agro-processing industries are product-based industries. Saurabh and Sultan (2017) explored the performance index of agro-based Small and Medium Enterprises (SMEs). It is vastly

distributed across the nation. Human factor is one of the major indexes in the performance of the industry. These industries performance depend mainly on workers' and employees' skills, level of training provided to workers and their performance, recruitment system, performance-based incentive, commitment, participation towards process improvement, etc.

Sugar industry is one of the major agro-based industries in the agricultural sector. A study showed that HRM practices are implemented in private sugar mills in India. HRM practices were explored through the satisfaction of employees. The study indicated that suitable training practices, career planning, reward, recognition and performance appraisal were followed in the sugar mills. These practices have been motivating factors for employees, organizational commitment and level of satisfaction (Anitha et al. 2012).

4.1.2 Industrial sector

Industrial sector also called a secondary sector, constitutes construction, manufacturing, mining and quarrying, electricity, gas, water supply and other utility services. Major industries which are classified under the manufacturing sector are automobile industry, electronics, semiconductor industries, machinery, chemical, pharmaceutical industries, and aviation industries (Mehta, and Rajan, 2017). Manufacturing sector consists of organized and unorganized sectors. Household enterprises make use of family labours who are generally found in unorganized manufacturing sector. Organized sector consists of more than 20 employees and has a better working environment, pay policies, etc. (Kapoor 2015).

A new concept has been introduced called Green Human Resource Management (GHRM) to minimize the impact on the environment by having environment-friendly strategies and control future damages to the environment. Knowledge about the environment, contribution to the environment, the behaviour of employees towards the environment has been taken into consideration for HRM. Chaudhary (2019) examined the status of GHRM in the automobile industry which included green recruitment selection, green training, green performance management, green compensation reward and green employee involvement. Basically, GHRM integrated

all HRM functions along with environment-friendly parameters. GHRM is moderately practised in the Indian automobile industry (Chaudhary 2019).

Indian pharmaceutical industry is classified into domestic companies and international companies. Increase in domestic demand, outsourcing, low-cost manpower, skills of the workforce, low-cost manufacturing operations has created a large platform for international companies. Pharmaceutical industries require skilled, specialized technical and scientific knowledge expertise. PPA practice has a positive impact on job satisfaction in the pharma industry (Sadekar 2016). Training and development are an integral part of this industry and is a continuous process in these organizations. PPA practice also indicates the need for training or employees in the pharmaceutical organization (Sadekar, 2016).

4.1.3 Service Sector

India's service sector constitutes of Information Technology, IT-enabled services (ITeS), Telecommunications, Broadcasting, Financial services, Community services, Hotels and Restaurants. Chand and Katou (2007) found that HRM practices in the hotel industry are directly related to organizational performance. The hotel industry is a rapidly growing industry in India and is highly dependent on individuals where service, quality and customer response are the keys for a successful business. These three parameters are directly associated with PA. As a part of HRM, PPA is one of the keys to managing employees and achieving organizational objectives. PPA is widely used in the Indian hotel industry to increase employee performance to satisfy the customers and improve the business. The performance of an employee is easy to measure in this industry and modern methods are being used to evaluate the employees (Chand and Ranga 2018).

Banking sector is classified into public sector banks and private sector banks which deal with financial services such as loans, credit, savings, wealth management and currency exchange to the customers. Banking sector made tremendous progress after economic liberalization. The difference between the public sector and private sector banks is that private sector banks have implemented modern practices such as the

360-degree method and employees are satisfied with their appraisal system when compared to the public sector (Shrivastava and Purang 2011).

Sanya and Biswas (2014) explored the implications of PA in the IT organization and their plan to excel in the PA through the implantation of mutual goal setting, continuous monitoring, linking the individual and team performances and focusing on innovations.

IT organizations and construction organizations operate in project-based environments, where resources including human resources are mobilized/assigned depending on the project requirements. The only difference is that construction organization employs human resources with wide variation in skillsets whereas IT organization employs highly skilled professionals. Also in terms of number of persons employed, both types of organizations are of comparable magnitude.

4.2 Comparative study of Construction industry and IT(service-based) industry

a) IT (service-based) industry

IT sector is an emerging sector in India. IT sector has been classified into IT Service, software products, business process management, engineering and hardware (Raghav and Krishna, 2017). IT(service-based) works on the specific need of clients which are exclusive and tailored. While IT (product based) organizations develop a product and sell the products to the clients. Business Process Management (BPOs) takes the contract of non-primary business tasks (example: customer service).

The nature of IT organizations are dynamic, quick adaptation to new technologies, 24*7 working, teams distributed globally with different cultures, languages and different time zones (Singh2013). Each project varies with unique requirements, technology, schedules and budget. Modifications in the project along with changes in roles and responsibilities are part of the software projects. Indian software organizations are mostly service-based and offer back-office services to clients around the globe with effective labour cost advantages (Singh 2016).

IT industry is a knowledge-intensive industry. Knowledge is the key, HRM philosophy and systems are acute factors for the survival and growth of IT industries (Agarwal and Thite 2003). Singh(2013) explored the perception of software professionals about the performance management process. Performance management aspects i.e. planning, feedback, participation, knowledge about the system, justice dimensions, interpersonal relationships were taken in account with respect to software professionals. The results indicated that the professionals were fairly satisfied with the performance planning, participation in the process and moderately satisfied with the feedback, whereas justice dimensions, Interpersonal relationship relating performance management process, and perceived knowledge about system needs attention.

The software industry is entirely dependent on human resources. It is significant to maintain effective HR practices in such type of industry. Indian IT organizations or affiliated organizations are influenced by International Human Resource Management (IHRM) and found to be similar to IHRM (Mathew and Jain 2008).

b) Construction industry

Construction industry is the second-largest employer in the country (Jha and Iyer 2006). CI accomplishes simple projects to complex projects. Some common characteristics of these project are that they cater to client needs despite being unique, of different sizes, varying complexity and level of risk. Within less time contractor has to mobilize the resources once the tender has been awarded. There might be sudden changes in the workload and responsibilities within short period of time. Major works of CI are done at site, workforce may have to move from one place to another once the project is completed and therefore managing workforce, work-life balance would be challenging (Loosemare and Dainty 2003). Overall this industry has its unique characteristics such as labour intensive, temporary organization set up at the site, challenging work, environmental factors that demands adaptability for both organization as well as for the employees, unpredictable markets which make the industry different from the others (Druker and White 1995). These are the potential reasons that contribute to the poor HRM practice.

The CI is project-driven industry. The current management practice has shown less performance levels when compared to other industries (Vrijhoef and Koskela 2005). People management in the CI is not well sophisticated and limited focus is laid upon personnel and personnel practice, when compared to others. Organizations concentrate on projects and financials. Personnel practices and policies have a limited role in construction organizations (Druker and White 1995).

This research glanced over different sectors in India to understand the nature of industries through literature. Industries of IT Sector, manufacturing sector, aerospace sector are considered to be advanced based on their structural, cultural and management practices when compared to other industries (Vrijhoef and Koskela 2005). There were few characterstics that were found to be present for both IT and construction organizations. Of the listed charactrstics some were found to be similar to both type of industries . With reference to Singh 2011;Singh (2016);Ofori(2015); Chan et.al (2004) below table 4.1 shows the differences and similarities between two industries.

Table 4.1 Differences/Similarities between IT(service-based) industry and Construction industry

Sl.No	Differences/Similarities	IT(service-based) Industry	Construction Industry
1	Type of Work	Project-based	Project-based
2	Type of employees	Highly Skilled	Highly skilled to unskilled employees
	Nature of work	Dynamic	Dynamic
3	Project characteristics	Each project is unique	Each project is unique
4	Complexity of project	Yes [with clear process to challenging]	Yes [Simple to complex]
5	Client specifications	Works based on Client Specifications	Works based on Client Specifications
6	Timeline for project	Yes,	Yes
7	Phases of Project management	Yes, Initiation Project planning, scheduling, controlling, monitoring, closing	Yes, Initiation Project planning, scheduling, controlling, monitoring, closing
8	Quick adapation	Yes	Yes

9	Team involvement	Yes	Yes
10	Involvement of coordination , communication, sudden change in responsibilities	Yes	Yes
11	Use of technology	Yes, it's a tech-savvy industry	Yes, limited use of technology when compared to IT
12	Unforeseen conditions	Yes	Yes
13	Rework	yes	Yes
14	Stakeholder involvement	Yes	Yes
15	Handling multiple technical/functional dependencies,	Yes	Yes

Here, the collection of all the organizations in a particular field represents the industry as a whole. Hence the results of the study can then be generalized for the entire industry.

4.3 Case studies

Semi-structured interviews were conducted with IT professionals and construction professionals. Five interviews were conducted from the IT organization. The numbers of interviews were limited due to data saturation. Interviewees were asked about the details of HRM and PPA system and the way it is practiced in their organizations. Five construction organization professionals were chosen from O4 organization (Details of O4 is presented in chapter 6).

Rao (2007) studied the effectiveness of performance management in different Indian organizations. Based on following similarities, comparison is made. Several parameters such as awareness, feedback, goal setting, communicating goals, competencies (PDs) linking to individual performance and development of employees were adopted from this study, which could be comparable between different organizations. PPA system of large construction organization is compared with a large IT (service based) organization with the help of case studies. Ten parameters were

compared between the two organizations. Comparison is given below and is summarized in table 4.4.

4.3.1 IT Organization details

Name: *IT Organization 1(IO1)*

Established: *2017(spin-off with another IT organization)*

No. of Employees: *>500*

Annual Turnover: *> 500 Cr. (INR)*

A multinational company that is providing end to end IT services and solutions. Providing customers with a digital transformation journey multiply their capabilities and help them to harness innovation.

4.3.2 Interviewee Profiles

Table 4.2 Interviewee profiles of IT professionals

Interviewee ID	Designation	No of interviewees
I1	Team lead	1
I2	Assistant HR	1
I3	Senior test engineer	1
I4	Engagement lead	1
I5	Software developer	1

Table 4.3 Interviewee Profiles of construction professionals

Interviewee ID	Designation	No of interviewees
OI41	Project manager	1
OI42	Assistant HR	1
OI45	Assistant Construction Manager (Mech)	1
OI49	Assistant Construction Manager (Civil)	1
OI416	Senior Engineer	1

4.3.3 Nature of the organization

Construction organization: The nature of CI has been already mentioned in various sections. Similarly, this nature of working of this organization is dynamic, temporary, project-based, employees work in remote places with unforeseen circumstances to accomplish client needs with a time frame (Druker and White 1996; Chan et. al. 2004; Shirur and Torga 2014).

IT (service-based) organization: This organization also works based on projects to accomplish the client's needs. Projects are temporary and volatile. This industry demands employees to adapt to timeline pressures. An extremely competitive market demands technical expertise and innovation among the employees.

4.3.4 Type of employees

Construction organization Based on the nature of the industry, the organization requires skilled employees, semi-skilled employees, and unskilled employees for the smooth running of the organization (Ofori 2015).

IT organization: IT organization requires employees such as experts, specialized skills to perform their work, knowledge, trained professionals, in other words, knowledge gets converted to work. This industry is highly dependent on the intellectual ability of the employees (Singh 2013).

4.3.5 HRM practices

HRM is concentrated on recruitment, training and development, performance appraisal and safety measures, which is being followed for many years by both organizations.

Commonly employed HRM practices are (Albanese et al. 1991)

- Manpower planning practices
- Performance management practices
- Compensation practices
- Training and development practices
- Safety practices

With time many innovative practices have been counted in as a part of HRM to enhance the development of an employee. Organizations should adopt new practices

of HRM, to bring effectiveness and be able to compete with their competitors (Zhang & Gong 2009).

a) Recruitment and Selection: This stage involves hiring suitable employees and its process in an organization. Following are the approaches adopted by two organizations.

IT organization: According to I2 the industry is highly competitive, has to be updated concerning new technologies, management practices and every organization want to recruit talented employees. The organization recruits experienced employees through external and internal sources. Fresh graduates are hired for internship later internship gets converted into the job.

External Sources: Employees are recruited through advertisement, through job agencies, job websites Walk-in interviews (based on requirement).

Internal Sources: Employees are recruited through internal job postings, employee referrals etc.Selection based on screening, several rounds of technical interview followed by the HR interview process.

Construction organization: Recruits freshers and experienced employees through external and internal sources.

External sources: Employees are recruited through advertisements, job agencies, job websites walk-ins and contractual hiring (based on requirement).

Internal sources: Employees get recruited through internal job postings, employee referrals, campus drives from renowned institutions etc.

Selection based on aptitude test, group discussion, technical interview followed by HR interview for fresh recruits. Based on the eligibility criteria and experience, employee profiles get screened and undergo the technical and HR interview processes.

b) Training and development

Recruitment and selection enable the organization to get talented employees for the organization. Training and development are conducted for the employees to enhance their skills and knowledge and organizational performance. Based on the organizational needs Training and development has to be implemented (Ferreira 2016)

IT organization: Induction for new employees, regular web-based training to update with new technologies, knowledge transfer sessions, programmes on social and behaviour skills.

Construction organization: This organization has several programmes to claim on improving the employees. That is through induction for new employees, e-learning portal, certification programme related to the jobs. Sponsoring post-graduation programmes for eligible candidates, web-based training for employees, regular safety training at sites.

c) Compensation Practices: Compensation practices is a technique used in the organizations by compensating the employees in the form of monetary or non-monetary form in exchange for their work and to get the desired results, enhance and maintain their behaviour(Gope et.al 2018). Employment policy documents were not available to study/examine from both organizations as it is internal documents. Based on the interview data, the practices have been studied and compared.

IT organization: The organization do follow the compensation practices. This could be classified as monetary compensation and non-monetary compensation Monetary compensation involves salary structure according to the grade or ranking of an employee, bonuses. Non-monetary compensation is medical insurance, perks given to the employees in the form of food coupons, travel facilties, team outing, crèche facility etc. For talented employees, this organization does not hesitate to pay more than industry standards.

According to I2

> *"IT organizations concentrate on employee well-being, many activities to build the team, recreation facilities and extra perks are being given to the employee. These kinds of activities considered as one of the significant practices to create a strong bond between the employees which helps in organization performance*".
>
> Also, Employees seem to be satisfied by their organization policies and perks.

Construction organization: In this organization also compensation practices is been followed. Here also it is the form of monetary and non-monetary compensation. Monetary compensation is in the form of salary according to the cadre, promotion benefits, bonuses, house rent allowance and leave travel allownance .Non-monetary compensation is in the form of medical insurance, recognition,training and personal development etc.

OI416 quoted that "due to the nature of work in construction I am working restlessly without any compensatory offs, and make us feel that we are underpaid". There was a mixed reaction about the compensation and benefits. However, satisfaction about the compensation and benefits in this industry is subjective.

This organization has given importance to its employees in a different way by providing necessary facilities to the employees. Team building activities, other perks that would motivate the employees, were found to be given less importance due to the hectic schedule.

d) Performance management practice

Performance management includes several policies, activities related to organizational goals, objectives, productivity, increase resources or employees ultimately for organizational benefit. Generally, people consider performance management and PPA to be similar. PPA is a one-time process where it will be held once annually or biannually, whereas performance management is a dynamic and continuous process (Foot and Hook 2008; Denisi and Murphy 2017). Performance management begins with the PPA process focus on individual performance (Denisi and Murphy 2017).

4.3.5.1 Performance appraisal system

Performance goals and PD's

Performance goals are what employees work to accomplish in their job. Goal setting process is found to be alike in both industries. With respect to the job, performance dimensions are set with the help of the experience of senior employees and industry practices. Performance goals are provided by the immediate supervisor which would be communicated to the employees.

Construction organization: The individual who gets recruited would be informed/instructed/introduced about the organization's mission, vision, objectives, and goals. Specific performance goals/dimensions are communicated to the employees by their immediate supervisor. According to OI44, performance goals are set by the employee and immediate supervisor, which are mutually agreed upon. Performance evaluation starts with the self-evaluation of employees. The organization has developed competencies based on technical skills, knowledge and behaviour. Depending on the role played by the employees, these competencies are compared and performance is evaluated.

PDs have been communicated to the employees. However, it is not clear if the PD's have been communicated to all the employees. But it is observed that a mismatch exists between the performance dimensions defined and measured. It is found that reaching all individual employees is difficult because of the nature of construction work.

According to some employees of this organization PDs are mentioned in the appraisal form as part of formality. Appraisal seems to happen at the discretion of the appraiser.

IT organization: The organization has developed the PDs for the employees. There are pre-defined goals for every employee. Individuals know what is expected from them in their job and their roles are clearly defined. Some minor changes may occur during the job, which would be considered during the evaluation. Existing PDs are defined and get reviewed and updated after every appraisal. It is observed that clear direction had been given to the appraiser regarding the evaluation of the employees along with PDs.

As observed in IT organization, the communication medium is faster and it is easy to communicate with all the employees when compared to the construction organization. Technology plays a major role while communicating with employees. Though it may not be face to face communication, performance dimensions are communicated through other modes. From the interviews, it appeared that PDs are communicated to the employees and the HR department makes sure that the communication has been made regarding the same. The appraiser and appraisee both need to sign a declaration

that the goal-setting process has occurred and the PD's have been mutually agreed upon. Interviewees said that they would get know about PDs while getting recruited and every year they get a reminder from their immediate supervisors about the same.

IT industries have well-defined PDs. Employees work with respect to the performance goals and objectives, and their performance gets evaluated with it. Even though the system appears to be systematic while evaluating the employees the errors and bias are present in the system.

***Measurement of Performance*:** From the case study emerged that organizations are using MBO methods to measure performance. IT and construction organizations are using Self-appraisal and MBO methods to measure the performance.

Communication of performance (feedback) to the employees and Discussion

There is no difference between the construction organization and IT organization as both of them provide performance feedback. Once the appraisal is complete, the employee would be called by the appraiser and necessary suggestions/appreciation, benefits are given to the appraisee.

Necessary Steps to Improve Performance and Follow up

Both organizations want their employees to perform well in their job. Improving performance is a continuous process, not just during appraisal time. Steps have been taken to improve the employees, their skills through training, mentoring, etc.

e) Safety practices

Construction organization: Safety practices are taken very seriously in this organization. It is neccsary for any construction organization. Safety induction to all the employees is given by the organization. Since major work is at site, safety officer at each project site is assigned ,safety training is provided, mandatory PPE kits for employees is provided by the organization.

IT organization: Mock drill in case of fire, happens once in a year.

Summary of HRM practices in IT and Construction Organization

A summarized table 4.4 about the HRM in the organizations.

Table4.4 Summary of HRM practices and PPA

HRM practice	Organization IO1	Organization OI4
Recruitment and Selection	Recruits the experienced employees through external and internal sources. Selection criteria for experienced employees involves screening based on eligibility, written test(if needed), several rounds of technical interviews followed by HR interview. Fresh graduates are hired for internship through the organization website or campus drive. Selection is based on written test, group discussion, and several rounds of technical interview followed by HR interview round. After 6 months intern would be absorbed as a regular employee.	Recruits the freshers and experienced employees through external and internal sources. . Selection based on aptitude test, Group discussion, technical interview followed by HR interview for fresh recruits Based on the eligibility criteria and experience, employee profiles get screened and undergo technical and HR interview process.
Training and development	Induction for new employees, Regular web based trainings to update with new technologies. Programmes on social and behaviour skills.	Induction for new employees, e-learning portal, certification programme related to the jobs. Sponsoring post-graduation programmes for eligible candidates, web- based training for employees, regular safety trainings at sites.
Performance management (PPA)	Planning, communicating, monitoring, measuring performance PPA practice MBO method is used	Planning, communicating, monitoring, measuring performance PPA practice MBO method is used
Compensation Practices	Monetary compensation and non-monetary compensation Monetary compensation involves salary structure according to the grade or ranking of an employee, bonuses Non-monetary compensation are medical insurance, perks given to the employees in the form food coupons, travel allowance, team outing, crèche facility etc.	Monetary and non-monetary compensation Monetary compensation are in the form of Salary according to the cadre, promotion benefits, bonuses. Non-monetary compensation are in the form of medical insurance, recognition etc.
Safety Practices	Mock Drill in the organization	Safety induction .Regular interval of safety practices,

4.3.6 HRM functions

HRM functions include planning for human needs, recruitment and selection, orienting the new employees, training and developing, transferring, promoting and reward system (Albanese et al.1991)

Construction organization: It is observed that HRM functions are practiced in the organization. The major functional areas were planning, staffing, development and maintenance (employees).

IT organization: HRM functions were found to be a step ahead in this organization and performing well. In this organization, the HR team makes sure that there is no hassle whenever in need of human resources.

4.3.7 Awareness level about PPA

Construction organization: PPA process has been communicated to the employees, but it is found that only engineer level employees are aware of it and the other employees are not. Technical cadre employees who are eligible, rely on their superiors. A kind of negligence within the system was found.

IT organization: As mentioned above, IT organization consists of skilled employees. While recruiting the system has been explained to the employees. Literature from Singh (2011);Singh(2016) also supports that employees from software industries are well aware of the performance appraisal system and HRM system.

4.4 Key observations from the study

Both the organizations are practicing HRM and PPA systems. The key observations of the case studies are listed in the table shown below.

Table 4.5 Observation from case studies

Sl. .No	Parameters Considered for comparison	Construction Organization	IT(service-based) Organization
1	Nature of the Industry	Project Based	Project Based
2	Type of employees	Varies from Highly Skilled to unskilled	Highly Skilled
3	HRM system	Present	Present
4	Performance Appraisal system	Present	Present with fool proof tracking system
5	HRM functions	Executed HRM functions	Well executed all HRM functions
6	Awareness level about PPA	Not everyone is aware of it	Good
7	Performance dimensions	Defined	Well defined
8	Performance goals	Defined in a generic way	Well predefined goals and objectives including minor details
9	Communication of Performance dimensions	Lack of communication	Well-defined Communication
10	Execution of PPA	Executed	Systematically well Executed

4.5 Discussion

IT sector is considered to be having best management practices, whereas construction industry has always been criticized for poor HRM practices. The purpose of this study is to examine the wide range of HRM practices in a cross –industry context. Influence of variables such as size of the organization, nature of organization, human resource strategies, and PPA practices were analysed. This study attempted to propose the best feasible practices practiced by IT to CI.

On review of literature on HRM practices and PM related to the IT sector, it was found that IT organizations have given attention to the performance management system in the Indian context and the studies showed that IT employees are aware of

performance management, appraisal system and its benefits (Agarwal and Thite 2003; Singh 2013). The HRM practices from IT organization illustrates that organizations have to take care of their employees. Implementing HRM practices in the right way has always had a positive impact on employees (Gope et.al.2018). While CI has to adopt recent trends in the management practice as it has failed to follow the trends (Fernández-Solís 2008). Subsequently, this study indicates the presence of formal and structured HRM practices in both organizations to motivate the employees, employee retention, enhance their skills through training and development. HRM practices in IT industries are proactive, competitive and easily get adapted to the new system. Whereas in the Construction industry, getting adapted to the new technology or new practice is quite slow due to its limitations such as different geographic locations, types of employees (Fernández-Solís 2008). Differences are evident that IT organization has focused more on HRM practices when compared to construction organization.

Both the organizations have their own challenges. It is observed that balancing all types of employees i.e unskilled to highly skilled employees and getting work done is more complex and challenging in CI when compared to IT Sector. As Loosemere and Dainty(2003) mentioned, the construction industry necessitates the movement of the workforce from one location to another which may cause problems such as travelling, managing families. While the work from home culture, online working culture in IT organizations has made the employees stick around work for the whole day. Performance management and appraisal systems is being practised in both organizations. Both organizations have difficulties with employee performance due to problems such as a sudden change in scope of work, client demands, unforeseen conditions, communication and coordination. In terms of performance appraisal, it was clear that in IT organization communication of PDs, goals, feedback was effective and the employees are aware of the system. Systematic execution and attention to HRM practice are given by the IT organization. Here systematic execution involves that declaration signed by both appraiser and appraisee about their goals, clear directions/training for the appraiser to evaluate the employees, to give constructive feedback has been given.

From the case study emerged that organizations are using MBO methods to measure performance. MBO method is considered as an effective method to measure the performance of an employee (Islami et.al 2018). The description of MBO has been provided section 2.6.2.1.

4.6 Conclusion

To sum up the above-mentioned learnings and discussion, in IT organization PPA practices are set up and systematically followed. The industry requirements are communicated to employees and proper care is taken to ensure the employee performs as per requirement.The above mentioned practices can be adopted to construction organization. Furthermore, the employees of IT organization are aware of PPA process and its significance. This awareness is found to be overlooked by construction organization. Despite practising HRM and PPA practices, from this comparison it is evident that there is room for improvement in construction organization.

CHAPTER 5

QUANTITATIVE DATA ANALYSIS

This chapter presents the results of quantitative data analysis. Data for quantitative analysis for this study is obtained through a questionnaire survey. This chapter includes the report of data screening, the general profile of the respondents, results of descriptive statistics and factor analysis.

5.1 Data screening and editing

Data screening technique is classified into three types namely direct, archival, and statistical methods (DeSimone 2015). The obtained data are screened by the researcher using direct method by researcher by observing the responses using instructions given by DeSimone et.al (2015). Out of 141 responses, 133 responses were useful for the study. Incomplete questionnaire, missing data, and answering pattern of the respondents were used as a basis to screen the data.

Most of the responses are obtained through a web survey. After initial screening, the raw data was downloaded and saved. Data obtained in the form of questionnaire was edited and merged with web survey data; further data was coded which includes numbers or symbols wherever necessary for further analysis.

5.2 Reliability test

Reliability is conducted to check the internal consistency of the instrument or set of variables. Cronbach alpha is used to measure reliability of measured variables. The minimum value of Cronbach's alpha value is measured between 0 to 1; the minimum acceptable value is 0.7 (Hair et al. 2014). Cronbach alpha is given in the below table and is found to be above acceptable value indicating the reliability is excellent between the measured variables.

Table 5.1 Reliability test

Section	Cronbach alpha value
Shortfalls in PPA	0.81
Performance dimensions	0.96

5.3 General profile of the respondents

The construction industry is a difficult environment to obtain a high level of responses, especially when questionnaire survey is involved (Ankrah 2007). As mentioned above total number of valid responses obtained through questionnaire are 133 with a total response rate of 25%. First section is about general demography of the respondents and details are already given in section 3.3.1.

Table 5.2 Questionnaire Respondents Profile

	No of respondents	Frequency (%)	Cumulative (%)
Experience			
2-5 YEARS	78	58	58
6-10 YEARS	40	30	88
11-15 YEARS	6	5	93
16-20	5	4	97
20+ years	4	3	100
N	**133**		
Number of employees			
>500	82	62	62
200-500	23	17	79
<200	28	21	100
N	133		

The data presented in Table 5.2, shows that 58% of respondents who participated in the study are having experience range from 2-5years.The majority of the respondents are having experience less 5 years, while only 3% of the respondents have twenty plus years' experience in the CI. The experience of the employees would help to identify the perception of PPA in the construction organizations. Table 4.1 shows that out of the respondents considered, 62% were from large organizations; 17% were from medium size organization; 21% from the small organization.

5.4 Nature of PPA system

This section is analysed for frequency of the respondents. Different organizations have different methods to follow the PPA process. Also, experiences of the respondents are considered to analyse the results wherever necessary. The objective is to know which method is being used frequently in construction industry. Multiple response methods were adopted for this study because different organizations have different ways to follow the procedure**.**

Table 5.3 Performance appraisal system in the organization

Performance Appraisal system in the organization	**Frequency**	**Percentage (%)**
Yes	123	93
No	10	7
Total	133	100

While administering the questionnaire it is made sure that the respondents have undergone PPA at least once in their job. From the above table, 93% of the respondents agreed that their organization have Personnel Performance appraisal system. The other 7% of respondents said PPA is not there in their organization. Based on the experience level, every respondent has experienced performance appraisal process.

Table 5.4 Self-appraisal in the organization

Self-Appraisal system in the organization	**Frequency**	**Percentage(%)**
Yes	98	74
No	35	26
Total	133	100
N=133		

The self-appraisal system is an important part of an appraisal system, which helps the appraisee to exhibit his performance for the appraisal period to the management. Perhaps some organizations chose to give less or no weightage for self-appraisal as a part of the formal PAS process. This is due to employees being lenient while rating themselves (Holzbach 1978). These 35 responses indicated that their organization's PA system did not give prominence to the appraisees. Self-appraisal acts as two-way communication between employee and supervisor. Also, the self-appraisal system illustrates that the organization

takes into account employees' perspectives for an effective PA system (Roberson et.al 1993).

Table 5.5 Establishing performance dimensions

Sl.NO	How performance dimensions/standards are established?	Frequency	Percentage (%)
1	Industry practices	61	37
2	Group discussion	23	14
3	Job description	78	47
4	Others	4	2
	Total	**166**	100
	N=133		

Job Description (47%) and Industry Practices (37%) are top two parameters through which the PDs are established. PDs could be established with help of industry practice, but when a particular job is considered, PDs usually set with respect to the job, industry practices also play a major role.

Table 5.6 Setting performance dimensions

Sl.NO	Performance dimensions are set by	Frequency	Percentage (%)
1	HR Managers	35	21
2	Immediate supervisor	40	24
3	Managers	84	50
4	Committee including all	8	4
5	Others	3	1
	Total	167	100
	N=133		

The table shows the setting of PDs. Respondents (50%) indicated that PDs are set by Managers. Generally, managers and immediate supervisors are responsible for setting the performance dimensions. For higher-level management/board, CEO provides the dimensions per his/her vision of the company.

Table 5.7 Communication of dimensions to the employees

Are Performance dimensions communicated to employees	Frequency	Percentage(%)
Yes	103	77
No	30	23
Total	133	100

Among the respondents, 77% showed a positive indication that PDs have been communicated to the employees, which is a positive sign. Another 23% of respondents said PDs have not been communicated to them. There is also a small percentage of responses said there has been no communication regarding PDs to them, indicating the gap in communication irrespective of the years of service.

Table 5.8 Way of communication of PDs to the employees

Sl.NO	If Yes, How PDs are communicated to employees?	Frequency	Percentage
1	Correspondence	40	27
2	In meetings	55	38
3	Notice	22	15
4	N/A	30	20
	Total	147	100
	N=133		

When the respondents were asked about the communication of PDs, 38% of the respondents agreed that in meetings PDs are communicated. 27% of the respondents agreed for the correspondence method. 20% of the respondents said communication of PDs does not applicable to them.

Table 5.9 Performance monitored and communicated to employees

Sl.NO	How frequently performance is monitored and communicated to the employee??	Frequency	Percentage (%)
1	Annually	90	68
2	Biannually	10	8
3	Daily Basis	2	1
4	Monthly Basis	17	13
5	Others	14	10
	Total	133	100
N=133			

The table shows the frequency of performance monitoring and communicating to the employees. 68% of respondents agreed that performance monitoring takes place yearly once in the organization. Generally, formal appraisal monitoring and communicating the same takes at the end of PPA process (Loosemore et.al 2003). 13% of the respondents agreed that their performance gets monitored once in a month. When the responses were examined based on the experience level, respondents having experience 2-5 years have chosen this. This is due to the reason that organizations may have focused on less experienced employees performance. Other options included quarterly basis. This option was chosen by respondents having 20 + years' experience and are in top positions of the organization. Performance may be evaluated in terms of getting business to the organizations.

Table 5.10 Basis of performance measurement

Sl.NO	On what basis performance of an employee is measured	Frequency	Percentage
1	Comparing with each other	84	38
2	Past performance	58	27
3	Performance dimensions	55	25
4	Organizations goals and objectives	21	10
	Total	218	100
N=133			

This table showed that 38% of the respondents told that performance is measured by comparing the employees, irrespective of years of experience, which shows the present stage of PPA in construction organizations. However, respondents also mentioned performance is measured based on PDs(25%) and past performance(27%).

Table 5.11 Employee motivation to perform well in job

Sl.NO	What motivates employees to perform well in their Job?	Frequency	Percentage
1	Increments	101	37
2	Promotion	85	31
3	Recognition	85	31
4	Others	3	1
	Total	274	100
N=133			

According to the respondents (37%), increments for their work make them perform well in the job. Not only increment, promotion and recognition plays equal role in job performance and keeps them motivated. Also, work environment influences the performance.

Table 5.12 Steps taken to improve performance

Is there any steps taken to improve your performance?	Frequency	Percentage
Yes	112	84
No	21	16
Total	133	100

From the responses, it is noticed that 84% of organizations do take steps to improve the performance. 16% of the responses indicated that there were no steps regarding improving the performance. Organizations have to worry about employee performance, the appraisal process, as it affects the organization's performance too.

Table 5.13 Way to improve performance

Sl.NO	If yes, what are the steps taken to improve Job performance	Frequency	Percentage
1	Performance feedback	52	24
2	Training	81	39
3	Boosting Morale of the employee	51	25
4	No steps have been taken	21	10
5	Others	4	2
	Total	206	100

The respondents (39%) indicated that organizations give training to improve the employees. This seems like training is most preferred in construction organizations. Performance feedback (39%) and by giving moral support to the employees (25%). 10% of respondents reported that there were no steps for improving the performance of employees.

The existing PPA system is analysed using frequency analysis. From the results it is clear that, most of the organizations use the PPA system, and formally takes place annually. Also, self-appraisal is part of the PPA system in most of organizations. These results reaffirmed that organizations follow the process as mentioned by

Loosemare et.al (2003).Process that involves, identifying PDs, communication of PDs, monitoring, measuring the performance, discussion about performance and following up. The answers are sought for each stage and stated in this study. Job description and industry practices are the main parameters while designing PDs, and managers or immediate supervisor sets it. Communication of PDs takes place through either correspondence or meetings. The majority of the respondents said that performance evaluation is done by comparing with each other. Past performance and PDs are also used to evaluate the performance of an employee. Increment, recognition, and promotions are the keys to motivate employees to perform well in the organization. Training is preferred in most construction contracting organizations for underperforming employees.

5.5 Descriptive statistical analysis

As discussed in previous sections, to understand the perspectives or opinions of the employees towards PPA a questionnaire concerning shortfalls in PPA is analyzed using descriptive statistics. The results are reported in table 5.14 and discussion is given in this section.

Table 5.14 Descriptive statistics

Sl,no	Statements	Mean N= 133	S.D N=133
1	Performance Dimensions have been communicated effectively to employees from the superiors	3.62	1.28
2	Performance during the whole year reflected in the rating	3.65	1.29
3	Your Past performance affects in your appraisal	3.78	1.12
4	Appraiser rates an employee beyond his actual ability	3.14	1.19
5	Appraiser rates an employee based on critical incident	3.57	1.16

6	Appraiser has a tendency to give average rating to all employees	3.01	1.1
7	Appraiser gives more rating if you are similar to him	3.50	1.23
8	Your performance has been monitored regularly	3.63	1.09
9	Your appraiser recognize and appreciate you for your contribution	3.78	1.06
10	Based on performance feedback you will be able to improve your performance	3.98	1.01
11	After appraisal ,Performance feedback has been given to you effectively	3.47	1.24
12	Appraisers need training to evaluate your performance	3.56	1.16
13	Having good or bad relationship with Superiors has affected your Performance appraisal	3.65	1.19
14	Appraiser evaluates all the employees fairly	3.06	1.21
15	Performance feedback is given at appropriate time	3.35	1.29
16	Employee's behavior changes towards superiors during appraisal time (to impress superiors)	3.19	1.21
17	You feel like working more during Appraisal time	3.73	1.12
18	You feel stressed out during Appraisal time (appraisal Pressure)	2.98	1.2
19	Appraisee(employees) participates regularly in the appraisal process	3.02	1.25

20	You are satisfied with existing PPA process in your organization	3.38	1.27

The respondents showed neutral tendency about employee participation in the process, stress during the appraisal, behavioural changes to impress supervisors, horn effect, fair evaluation of performance, central tendency effect, and satisfaction about the process. Respondents tend to agree upon the communication of PDs, past performance effect, performance during the whole year reflected in the rating, similar to me effect, critical incident effect, regular monitoring of performance, need for appraiser training, feedback at an appropriate time interpersonal relationship effect, appreciation for contribution, performance feedback helps to improve employee performance.

The responses showed a higher standard deviation. There has been a large spread of responses due to less number of respondents, different experiences of an individual, and these varied perspectives have a wide effect on the results. Also, there were fewer responses may be due to the hectic schedule of respondents, lack of interest or may be hesitant to give information as it is related to HRM. The result showed that there is much difference in the opinions of employees. These differences in opinions may be due to their appraiser. An appraiser's act (behaviour, personal communication etc.) have a great impact on creating the perspectives (Brown et.al., 2010; Farndale and Kelliher 2013). Different viewpoints are due to PPA experience, and respondents' empathy towards the system made them have a positive feeling (Brown et.al 2010). From descriptive statistics results, shortfalls are challenging to identify and conclude. However, this is further explored through case studies.

5.6 Factor Analysis

Factor analysis is conducted to reduce a large number of variables resulting in data complexity to a few manageable factors. It is also used to identify the latent variables in a large set of data (Field, 2013). This section attempts to determine the performance dimensions that organizations have been applying to evaluate the performance of an employee.

5.6.1 KMO and Bartlett's test

Kaiser-Meyer Olkin measure of sampling adequacy and Bartlett test of sphericity for assessing correlations among measuring variables were conducted to check the reliability of the data (Hair et al. 2010). The threshold KMO value is 0.5 which indicates sample is adequate for further analysis (Field, 2013). Results indicated that KMO value is 0.879 and the sample is adequate, which is considered for further analysis. Bartlett test of sphericity has to be significant (Hair et al. 2010). The p-value is .000 < 0.05, which is significant and suitable for further analysis.

Table 5.15 KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.879
Approx. Chi-Square		4227.544
Bartlett's Test of Sphericity	df	1081
Sig.		.000

5.6.2 Factor extraction

An initial analysis is conducted to obtain Eigenvalues using Principal Component Analysis. Eigenvalues are used as deciding values on whether to retain the factors or to discard them. SPSS tool uses Kaiser's criterion for retaining factors with eigenvalues greater than 1 (Field,2013). Eleven factors expressed the Eigenvalues. The most common method is used fixes the factors are Scree plot (Reio and Shuck, 2015, Field, 2013, Hair et al. 2010). Scree plot is a graph which is used to determine the number of factors to retain. Considering the elbow point in the scree plot, as shown in figure 5.1, seven factors were retained for further analysis. The seven factors were retained with a total 62.015% variance of the 49 dimensions.

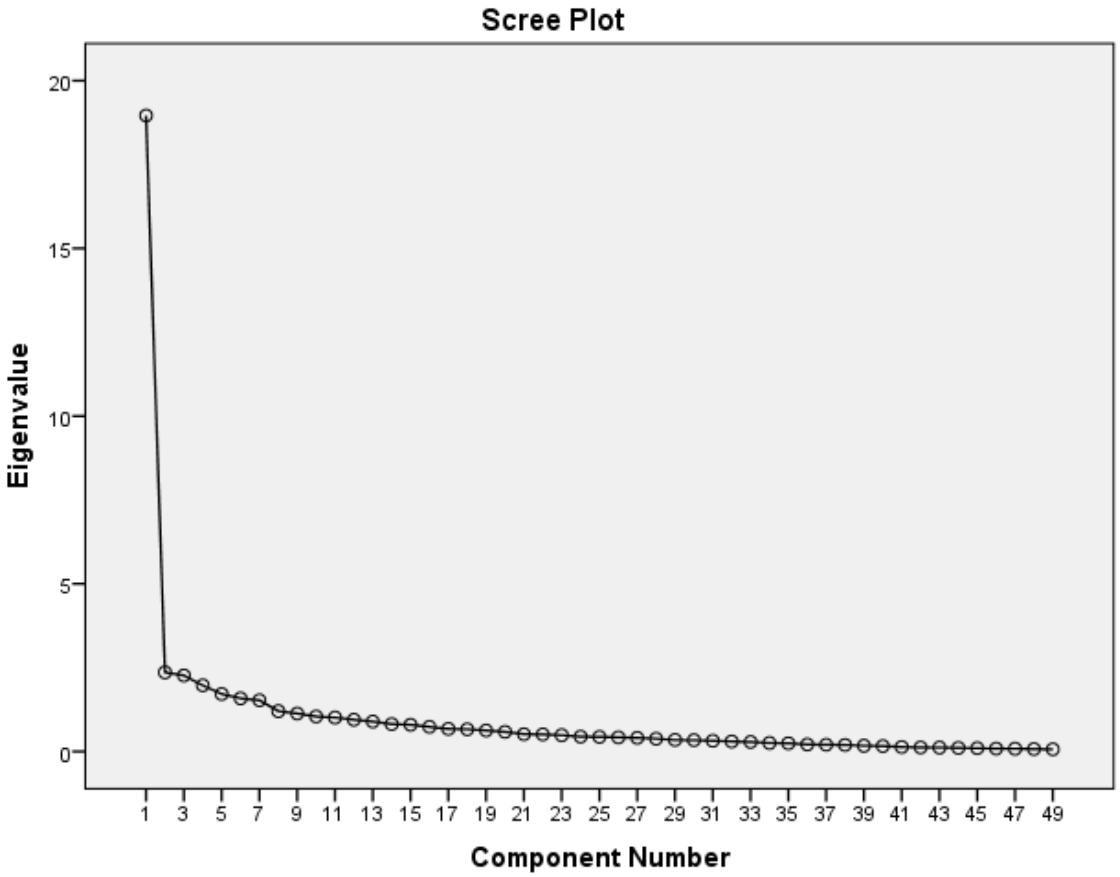

Figure 5.1 Scree plot for performance dimensions

5.6.3 Factor rotation

Initial factors were found to be difficult to interpret the results and had many cross-loadings; the obtained factors are rotated to minimize the complexity and could be interpreted easily. Hence the rotation method is applied to the initial factors. Commonly, Varimax rotation is used (Reio and Shuck, 2015) as it simplifies factor interpretation. The Varimax rotation method maximizes the variance of the loadings within each factor. The variance of the factor is largest when its smallest loading tends to zero, and its largest loading tends to unity.

For result interpretation, a cut-off point on the factor loading is selected. The recommended value is above 0.4(Reio and Shuck, 2015).Here 0.45 is considered for the analysis for better interpretation and to remove the factors with low loadings. The variables consist of factor loadings which are above 0.45 that are obtained as outputs are used for naming the variable into the group. Naming the group is subjective to the

researcher, and it is recommended that variables in the group should be contributing to the group. (Reio and Shuck, 2015).

5.6.4 Factor loadings

From the below table number 5.16, factor analysis reduced 49 PDs (variables) to 39 PDs which are classified into 7-factor groups (KPDs). This factor group's representation is viewed as what they represent collectively not individually in expressing the concept (Hair et al. 2010). Factor analysis results indicate that each of the PDs are essential and have sufficient factor loadings in determining the importance of employee appraisal in construction organizations. Suitable or most appropriate name for each factor group is given and discussed below.

Table 5.16 Exploratory factor analysis

	Performance Dimensions	**Factor analysis**						
		F1	F2	F3	F4	F5	F6	F7
1	Work distribution	.708						
2	Knowledge about OSHA building laws safety rules and regulations	.676						
3	Punctual	.669						
4	Technical skills	.663						
5	Systematic at work	.620						
6	Problem identification and resolving Noticing errors	.613						
7	Adaptability	.598						
8	Effort	.523						
9	Presentation skills		.751					
10	Non-verbal communication		.699					
11	Financial knowledge		.623					
12	Interactive		.542					
13	Observing ability		.539					
14	Listening		.535					
15	Reasoning		.528					
16	Interactive		.542					
17	Reasoning		.528					
18	Negotiation skills		.529					
19	Knowledge about domain		.511					
20	Compatible			.755				

21	Conflicts resolving skill			.720				
22	Focusing on colleagues/labour problems			.648				
23	Influencing skill			.647				
24	Supportive			.631				
25	Staffing			.626				
26	Boldness			.558				
27	Loyal				.755			
28	Involvement at work				.642			
29	Enthusiasm				.632			
30	Honesty				.624			
31	Knowledge about project					.599		
32	Situational Learning					.560		
33	Interdependency					.552		
34	Outcome oriented					.708		
35	Leave usage level						.749	
36	Overtime work						.580	
37	Attendance in Meetings						.554	
38	Reporting superiors							.740
39	Diplomatic							.554
	Variance Explained (%)	13.250	13.045	12.317	8.921	5.921	4.580	3.982
	Total variance	62.015%						

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization

5.6.4.1 Technical Skills

Technical skills are one of the essential competencies which an employee should possess. This group consists of both technical and generic skills. Where technical skills are specific to the particular task, and generic skills are the skills that could be transferred to different roles (Detsimas et al. 2016).Knowledge about safety rules and regulations, buildings laws, working standards, methods, techniques are noteworthy and could be classified as generic skills. Mainly these abilities indirectly help in organizing the task, activities which could save rework, and increase productivity resulting in high performance. However, these technical skills are essential depending on the role. For some positions, technical skills are highly important and for some positions may be less relevant. This group consists of factor loading ranging from 0.7-

0.5 with the variance of 13.25% of the total variance. From the results, factor group 1 named as Technical skills consists of Performance dimensions namely Work distribution (0.708), Knowledge about OSHA building laws safety rules and regulations (0.676), Punctual (0.669), Technical skills (0.663), Systematic at work(0.620), Problem identification and resolving, Noticing errors (0.613) and Effort(0.523).

5.6.4.2 Communication

Communication involves exchange of information related to work by different modes among the employees, with the superiors and subordinates and clients (Odusami 2002). Different modes of communication such as non-verbal communication, verbal communication mentioned in the study play a major role to keep the employees updated at work. Communication helps in improving the performance of an employee if it is done in the right way (Otieno, 2015). Effective communication is one of the key to project success (Zuo et. al 2018). This group consists of factor loading ranging from 0.7-0.5 with the variance of 13.045% This group consists of performance dimensions are are Presentation skills (0.751), Non-verbal communication (0.699), Financial knowledge (0.623), Interactive (0.542), Observing ability (0.539), Listening (0.535), Negotiation skills (0.529) and Reasoning (0.528). This group consists of variance 13.045%.

5.6.4.3 Leadership skills

A team executes construction projects consists of sub-teams (Chan and Chan 2005). Each team requires a person who can lead the teams. There is a fine line between the leader and manager, the characteristics of manager and leader are hard to distinguish and overlap. Effective leadership motivates the employees; improves the relationship between the employees and superiors. Leadership attributes have a direct effect on employee outcomes such as satisfaction about the job and work outcomes. Toor and Ofori, (2008) emphasized that CI require manager with leadership skills and leader with managerial skills. Toor (2011) mentioned an example, where an employee dealing with clients he needs managerial skills when he deals with his team or with other employees leadership skills are necessary Organizations should develop their employees into managers who are leaders as well. This group indicates the attributes

which an employee should possess and this group consists of Compatible (0.755), Conflicts resolving skill (0.720), Focusing on colleagues/labour problems (0.648), Influencing skill (0.647), Supportive (0.631) Staffing (0.626) and Boldness (0.558). This group has a variance of 12.317%.

5.6.4.4 Self attributes

The employees undergo a lot of challenges while executing projects such as emotional challenges and ethical challenges, along with professional skills. Self attributes are important to sustain in the organization. Self attributes are the attributes within the employees where they have to manage themselves. Knowing the strength and weaknesses of themselves helps to perform well in the job. The Performance dimensions in this group are loyal (0.755), Enthusiasm (0.642), Self-awareness (0.632), and honest (0.624). This factor explains a total variance of 8.921%.

5.6.4.5 Interpersonal skills

This group explains low variance, i.e. 5.921%. This group is named as interpersonal skills; Interpersonal skills indicate the ability to work well with employees of diverse background within and outside the organization. These skills apply to all levels of employees (Mencl et al.,2016). It helps to understand the nature of employees. Few qualities included approachable quality leads to build open communication between the employees, which is necessary; this would create a friendly atmosphere among the employees. Construction is a knowledge-based industry, knowing their domain is an advantage and acts as a driving force for the challenges (Pathirage et al. 2005). Also, Learning from past mistake is a great personal trait of an employee. This group consists of Outcome-oriented (0.708) Knowledge about domain (0.599), Situational learning (0.560) and Interdependency (0.552).

5.6.4.6 Availability:

This group is associated with the employee's presence at the workplace. Leave usage indicates employee unavailability, which in turn can have severe consequences if during critical times. Delays are common in construction projects. To overcome the delay and maintain schedule, employees may have to work more than usual working hours. Overtime work is meant to speed up the work. Construction employees are found to be working for longer hours; this would create and affect job performance

(Alvanchi 2012). It is suggested to adjust the schedules, changes in shift, compensation in the form of monetary benefits, or compensation off for the employees. Employees have to be available during these hours (Dong 2005). The group named availability consists of Leave usage (0.749), Overtime Work (.580), Attendance in meeting (0.554) Accounting for variance of 4.580%. This group explains less variance, i.e. less than 5%. However, practically these variables are significant in PPA, which is further explained in case studies.

Minimum three variables with high loadings should be there to form a factor group (Field 2013). The 7th factor consists of two variables that are unable to consider it as a single factor. Hence it is not viewed as a factor group.

5.6.5 Implications of Factor analysis

The EFA carried out led to reducing the initial factors (49 PDs) to 39 PDs which were effectively contributing to the PPA, which were also the respondent's perception. The EFA also grouped these factors to 7 groups. Initially 49 PDs were identified based on literature survey and pilot test. The EFA helped to eliminate the PDs having less importance. Subsequently EFA assisted in focusing the study on the PDs that had more significance. During literature survey it is found that with reference to CI, the PD's were defined only for few designations. The studies have not been carried out on identifying the PDs considering different levels of organizational hierarchy. It is anticipated that the outcome of the analysis would help to narrow the gap in the literature of PA in the context of construction industry. The outcome of the EFA retained six factors. The factors were Technical skills, Communication, Leadership, Self attributes, Interpersonal relationship and availability. From this analysis, it is discovered that Technical skills consists of seven variables and have the highest variance and Availability consists of three variables with less variance. The variables or PDs in each factor are already discussed in the above sections.

5.7 Summary

In this summary, the existing PPA system is analysed using frequency analysis. Answers are sought for what, when, how often in the existing PPA system. Descriptive analysis is utilized to identify existing shortfalls in the construction industry. From descriptive statistics results, shortfalls are challenging to identify and

conclude. Hence it is further explored through case studies. The major challenge was to identify the important PDs for construction organizations. Factor analysis aided to identify 39 PDs and grouped into six major KPDs, namely technical skills, communication, leadership skills, self attributes, interpersonal skills.

CHAPTER 6

CASE STUDIES ON CONSTRUCTION CONTRACTING ORGANIZATIONS

6.1 Introduction

Case studies were conducted to strengthen the research. Identified cases were as per the research methodology discussed in chapter 3. The main objectives of case studies were to understand a) the existing PPA process in the organizations b) challenges faced by appraisers and appraisees, and c) identifying performance dimensions required for PPA in the context of construction contracting organizations. Multiple case studies were conducted in different construction contracting organizations. For each case study, organization's detail and organization's structure are mentioned. In this chapter, results of semi-structured interviews which were described in themes have been analysed in line with the objectives of the study. Each of the interviews are transcribed and coded. Based on the word's frequency, PDs are mapped for three levels of management and presented.

6.2 Case 1

6.2.1 Organization Details

Company Name: *Organization 1 (O1)*

Established: *Since 1983*

No of Employees: *450*

Location: *Hubli, Karnataka*

Annual turnover: >500 Cr INR

6.2.2 Organization Structure

Organization 1 (O1) comes under medium scale industries based on the number of employees working in the organization (Prakash and Phadtare, 2018). The organization has clearly defined its structure consisting of various departments. It consists of site division, mechanical division, tender and contracts, accounts department and administration department. This organization consists of a

hierarchical structure, where the levels of management are clearly shown (Fig 6.1). At the site level supervisors, surveyors, lab assistants, mechanical helpers, drivers, operators, and store in charge report to their immediate supervisors. As per the company classification, these designations come under the technical cadre. Middle-level management includes site engineers, mechanical engineers, electrical engineers, quantity surveyors, and material engineers who report to deputy managers. For appraisal purposes, project manager is responsible at the site level. At office-level, employees directly report to their department heads, who are accountable for the appraisal process. Figure 6.1 and 6.2 shows the organization structure of O1.

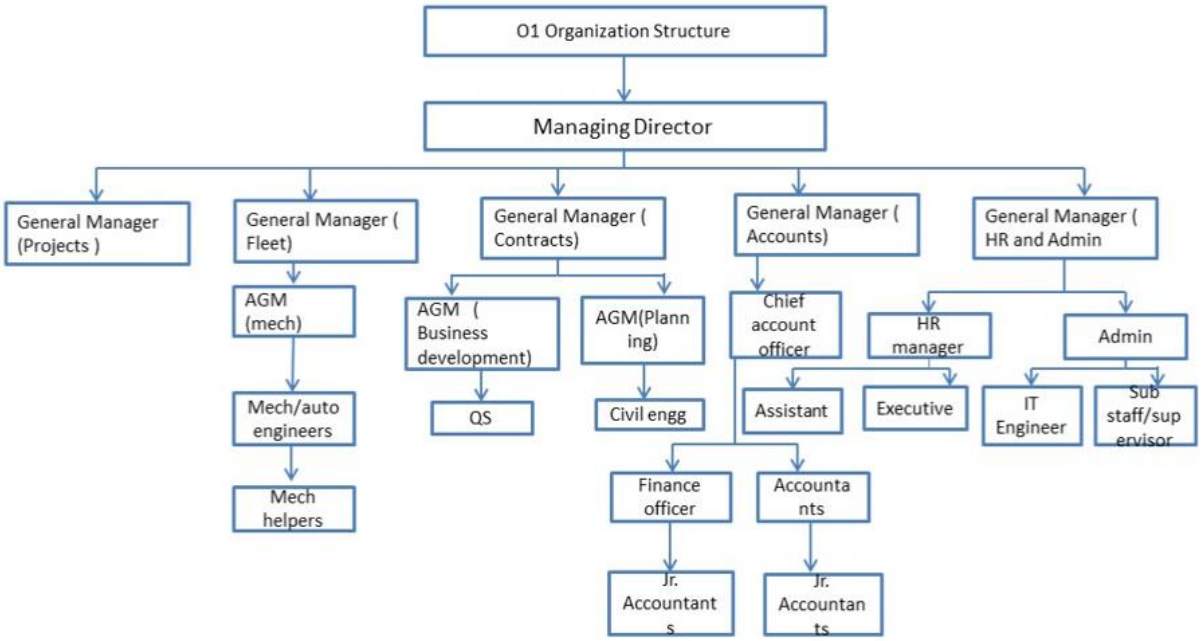

Figure 6.1 Organization structure(O1)

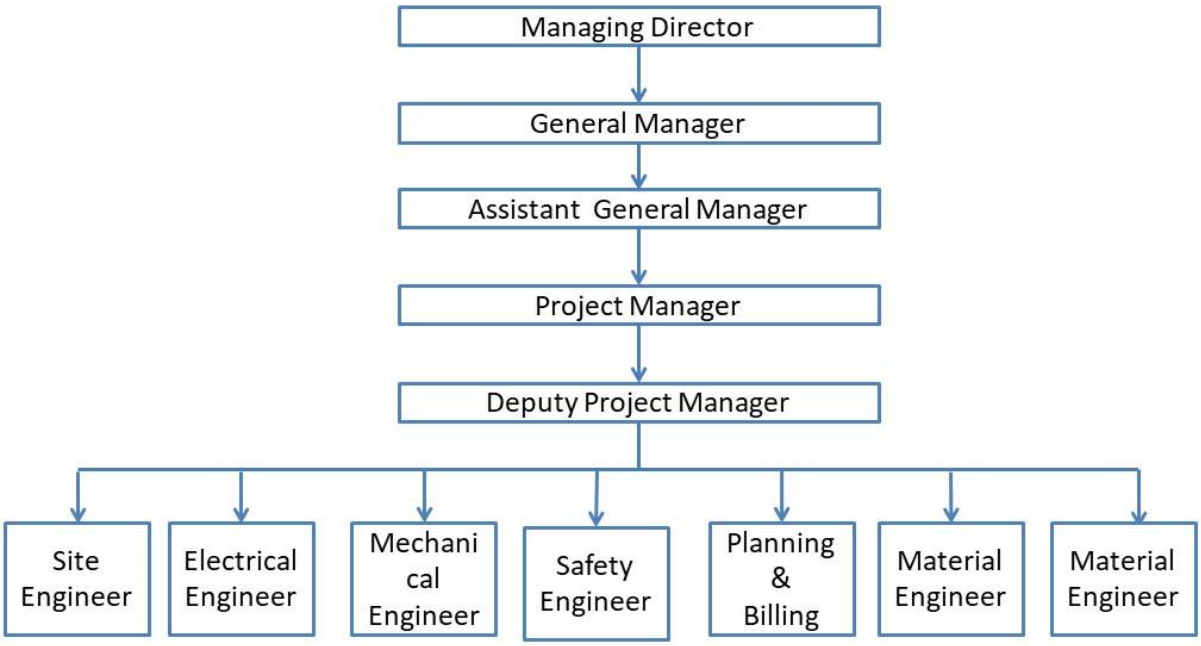

Figure 6.2 Organization structure - site division (O1)

6.2.3 Interviewee Profiles

A prior appointment was taken to conduct the interview with the Assistant General Manager (Projects) and HR. The researcher was allowed to choose the employees for the interview. With the help of HR, interviewees were carefully chosen based on their experience level and profile. These criteria were applied to all the case studies. Total of 11 interviews are conducted for O1, which covered all the departments in the organization. Details of the interviewees are given below.

Table 6.1 Interviewee profiles

Designation	No of interviewees	Interviewee Code
Assistant General Manager(Projects)	1	OI11
HR-Department	2	OI12
		OI13
Contract and Tendering department	4	OI14
		OI15
		OI16
		OI17
Site Division	4	OI18
		OI19
		OI10
		OI111
Total	11	

The interviewees were coded as OI11, OI12, and OI13 up to OI111. The obtained data from document review, observations, and interviews were qualitatively analyzed based on the following themes.

1. Existing Performance Appraisal Process in the Organization.
2. Shortfalls in the Existing Appraisal System.
3. Performance Dimensions for the Employees.

6.2.4 Performance Appraisal Process in the Organization

Interviewees were asked about the PPA process, their experience, and perspectives about the system in O1. Insights of interviewees helped in understanding the PPA system of O1 in a better way. The below section consists of responses given by the interviewees.

OI12 gave the outline of PPA

> *"The organization was founded five decades ago, as a partnership firm with Hubli as its corporate headquarters. Though the organization is old, the HRM concept was introduced ten years ago. As a part of HRM practices, performance appraisal process was introduced 4 years ago in the organization. Formal appraisal process is being practiced in the organization.*

OI13 said

> *"Performance appraisal has been implemented as a part of the procedure, and employees have taken it casually, the parameters were not set according to industry practice or parameters, which were adopted from online sources."*

Thus, it is evident that employees are less concerned about performance appraisal. When the employees are recruited, their roles and responsibilities are communicated by colleagues or by their superiors. As per the HR of O1, the appraisal is done at two levels. One is at the site level and other being at the office level. O1 does not have a self-appraisal system. Basic Key Performance Areas (KPAs) are considered for

appraisal by immediate superiors. Hence the immediate supervisor has to fill out the appraisal form for their subordinates. There are two different appraisal forms: one for middle-level employees and others for technical cadre employees. At the site level, project manager's decision would be the final.

Next level is at the office level. At this level, the performance appraisal form is the same for all employees irrespective of their department. The appraisal process does not apply to sub staffs. The overall average of parameters on a scale of 1-10 is calculated for PA. Personal attributes carry 30% of PA; the rest of 70% is based on job performance dimensions and appraisal interviews carried out by top management.

As per OI16

> "*We get evaluated based on our past performance, present performance, and based on the responsibilities assigned to us. Our immediate superior informs or instructs the work that has to be done. They will tell us how we have to carry the work. We get to know how we are working from our superiors. Based on that feedback, we will be able to perform well in the job".*

In the formal appraisal process, employees are monitored and feedback is given to the employees during the job and appraisal. However, in O1, performance during a job is discussed and informal feedback does exist regarding the job, and performance feedback is not a part of the formal appraisal process. According to interviewees, promotion and increments would motivate the employees to do well in the job. Sometimes recognition at critical events also drives them to perform well.

According to OI11

> "To *improve the performance, first we need to check why the employee is not performing; depending on the cause we can take necessary measures. As I know the main reasons, i.e. a) Technical reasons such as a delay due to labour productivity and machinery, lack of knowledge, negligence about work. This has been tackled by giving training, boosting them, transferring them from one place to another. b) Non-technical reasons such as personal problems, politics*

among employees, dominating nature of superiors. These issues have been sensitive to handle when they reported to higher authorities.

"Higher authorities always have managed to come up with solutions in a dignified manner."

"Also, we recognize the good performers and recognition or increment or promotions have been given to them."

OI13 highlighted that

"*As the company compensates more than norms along with perks, employees prefer to stay in the organization*."

Interviewee specified the root cause of non-performance and how the organization tackles it. The organization is practicing to provide yearly bonuses to the employees which are independent of their performance. Slowly the organization is implementing the PPA system. Since the organization is practicing annual bonuses irrespective of performance, employees have neglected the performance evaluation. It is also evident that most employees have preferred to be in this organization due to compensation and benefits.

6.2.5 Shortfalls in the Appraisal System

In this organization, the HR department is functioning in few areas. Performance appraisal is being conducted in the organization just for formality. As mentioned above, a general form is filled by the immediate superior of all the employees.

In this organization, the formal appraisal process has been practiced for the past four years. Most of the appraisers evaluate the employees based on their behaviour with the superiors.

OI13 also mentioned about the senior employee's attitude towards the appraisal. Senior employees who were working for a long time with the organization were having trouble adapting to the new management practices. This may be due to the mind-set of employees. Another reason might be that the organization's reward

system does not depend entirely on the PPA. Negligence towards the PPA system was observed.

According to OI18

> "*Already we are busy with so many works. In between, if we are asked to do the documentation work, it becomes really hectic for us and its time-consuming process. Also, it is difficult to monitor everyone. Evaluation is based on the achievement or failure, for example, achieved concreting within a certain period of time or some critical situation such as reworks*".

OI17-"*If we listen to them obediently and work according to that, rating will be high, even they expect the same from us. It is all about how we create an opinion about ourselves*."

Also, OI15 mentioned that

> "*Appraisal rating is based on the mood of the appraiser. If he is in good mood, rating would be good or else he will rate at his will. Also, if the appraiser knows the employee beyond the work, there are chances of getting a good rating.*

Based on the situation and mood of the appraiser, the evaluation would lead to halo effect or horn effect or central tendency effect or critical incident effect. It showed that biases in the appraiser's behaviour exist in this context. These errors are commonly found in every organization. When the PA form was observed, the Key Performance Areas mentioned in the form was different from what had to be evaluated. KPAs were more of qualitative measures in the forms, but during the interview, KPA's were quantitative in nature.

Work has been monitored regularly, depending on the job. Informal feedback was given for the areas where employees should improve themselves.

According to the OI11

> *"About feedback, nothing like formal feedback or informal feedback here, whenever I see the work, I tell them about the work, if employees are working*

well I ask them to continue the same. But if it doesn't turn in the way how it has to be, firstly I try to make them understand, or else I have to give strict instructions, it depends on the people who you are dealing with. When it comes to the site we always hear reasons and blame games. In those kinds of situations, of course, we have to tell employees how they have to work. Knowingly or unknowingly, it connects the performance feedback".

Appraiser always tried to give feedback positively. Appraiser recognizes excellent performers and motivates remaining employees too. This organization would like to implement performance appraisal systematically, and the process is in progress.

From the interviews and appraisal forms, it is noticed that performance dimensions were not communicated to the employees. One of the employees admitted that they are clueless about what they are being evaluated.

"When I joined here, HR mentioned about the performance in work, I would be appraised based on my work. Mostly my performance measured based on certain bill generation every month. I have been told to create/or reach a target of certain amount. Based on the bill generation superiors keep track of my performance. No other dimensions are mentioned to the employees by superiors. Other dimensions which have been mentioned in the forms were communicated by colleagues."

OI17 says

"*We don't have particular standards or dimensions for appraisal purpose; we work as per the superiors instructions. We don't play any part in the appraisal process*."

Opinions of OI17 were similar to those of OI16. The typical error found during the appraisal process is the lack of communication of KPAs (PDs) to the employees. Work was assigned to the employees by the superiors. Based on the work, superiors decide KPAs, but these KPAs are neither specified in the form nor communicated to the employees. It is evident that KPAs are not communicated concerning to appraisal. Employees would focus on their KPAs if they are aware of it. Employees get their

goals during the goal-setting process. But, most of the employees are evaluated based on qualitative KPAs which were not communicated. KPAs should be specified to the employees so that they can be more explicit about the PPA evaluation.

An employee is more prone to preferential treatment during appraisal if he/she is involved beyond his/her responsibilities or if his/her style of working is similar to the appraiser or has any influential background. Employees are expected to maintain good relations with the superiors. The interpersonal relationship was repeatedly mentioned by both appraisers and appraisee as important during the interviews. Since the system is not transparent, they do not know the adverse effects of interpersonal relationships during the appraisal. Employees expect it to be a fair and transparent process.

If the employees have performed very well, they get an appreciation which makes employees to perform better in the future. It is also noted that few employees have never come across appraisal pressure. Senior employees with work experience greater than ten years are not concerned about the appraisal process. There was a neutral opinion regarding satisfaction of the performance appraisal process.

6.2.6 Performance Dimensions for the Employees

The appraisal forms were collected from the HR department. This organization has two different forms, i.e. one for technicians and another is a general form that is applicable to all middle-level management employees, irrespective of designations and departments.

The dimensions mentioned in the appraisal forms are attendance and punctuality, grooming, interpersonal skills (attitude and uniform), quality of work, timely completion of targets, ability to do additional work, ability to handle crisis, maturity to handle customers, dependability, commitment, loyalty, and special role-based skills. These are the dimensions that are being used to evaluate employees.

When employees were interviewed, most of the employees are unaware of personal attributes such as grooming, uniform, and maturity to handle customers. Interviewees mentioned many performance dimensions that should have been part of the performance evaluation but were missing in the appraisal forms.

The mentioned dimensions during the interviews are listed below.

Time management/timely completion was the first parameter that was mentioned by all the interviewees. Each employee has been given specific goals relevant to their designation. For example, completing the work as per schedule for site employees, preparing tenders, and bill of quantities within the deadline for contracts department.

Coordination: Employees should know how to coordinate the activities according to schedule. Achieving target or daily goals is influenced by effective coordination of the activities/people/machinery etc.

Communication: Communication influences coordination because information/instructions have to be communicated, whether verbally or nonverbally. Communication between superiors-subordinates or with peers would influence the employee's performance

a) Verbal communication: This was mentioned by site engineers, supervisors who deal with other people at the site.

b) Non-verbal communication: This was mentioned by the people who are at the office and work on contracts/tenders/HR related activities, preparing reports.

Late-night Working hours/ extra working Hours: Employees might have to stay overnight at project sites to meet the schedules. Employees insist on considering this parameter during appraisal time. Employees would be enthusiastic about working for extended hours if late night working hours are recognised as a PD.

Negotiation Skills: Negotiation skill as a dimension plays a vital role in the organization.

Managing subcontractors: Managing, informing the scheduled work on priority, maintaining documents, etc. these factors directly influence the project performance. Employees should know how to extract quality work from the subcontractors. The employee from the contractor side is expected to maintain a healthy relationship with subcontractor.

Involvement at work: Involvement at work could be identified by observing the employee's participation in the work. Interviewees believe that most of the employees get involved in their work.

Leading Capacity: Leadership quality in an employee is highly desired as it helps the person to motivate the team to reach the goal.

Job knowledge: It is expected from the employees to have sound knowledge in their domain. If they lack the desired knowledge, it should be improved.

Behaviour/Attitude: This is about how an employee behaves with other employees or with superiors. Employees having a good attitude is always an advantage. As discussed in the previous section, interviewees believe that they get evaluated based on their attitude/behaviour.

Apart from these, interviewees also added parameters based on personal attributes such as *honesty, loyalty, and trust*.

Below table 6.2 shows the PDs mentioned by the interviewees. The PDs were coded and it was mapped using word frequency for three different levels.

Table 6.2 Performance dimensions identified by O1

Top management	Middle management	Technical Cadre
➢ Ability to handle the crisis ➢ Customer/Client handling ➢ Negotiation skills	➢ Time management/timely completion ➢ Late night Working hours/ extra working Hours, ➢ Job knowledge, ➢ Discipline, ➢ Behaviour/Attitude, ➢ Honesty ➢ Trustworthy ➢ Communication ➢ Managing Subcontractors ➢ Loyal ➢ No of invoice generation	➢ Time management/timely completion. ➢ Late night Working hours/ extra working Hours ➢ Job knowledge ➢ Discipline ➢ Behaviour/Attitude ➢ Honesty

	➢ Coordination ➢ Ability to handle the crisis, ➢ Customer/Client handling ➢ Negotiation skills	

6.2.7 Key observations from case study 1 (O1).

The organization is trying to implement performance appraisal practice. However, PPA is being practiced in the organization annually without self-appraisal. Creating awareness and effective communication is a significant concern in this organization. Lack of awareness and communication have caused negligence and resistance to the acceptance of the PPA. Like every organization's appraisal, errors were found and noted. The identified PDs were mapped at three levels. However, documents related to PPA barely provided information to analyse the dimensions.

6.3 Case 2

6.3.1 Organization Details

Organization's name: *Organization 2(O2)*

Established: *Since 2008*

Location: *Mangaluru*

Number of employees: *70*

Annual turnover: *INR 10-15 Cr*

6.3.2 Organization Structure

O2 consists of five departments which include purchase, accounts, construction, quantity surveying, and billing and contracting team. In each department, employees directly report to the head of the departments and managing director. The HR manager mentioned that all the employees come under the coordinator level, as shown in the chart Fig (6.3)

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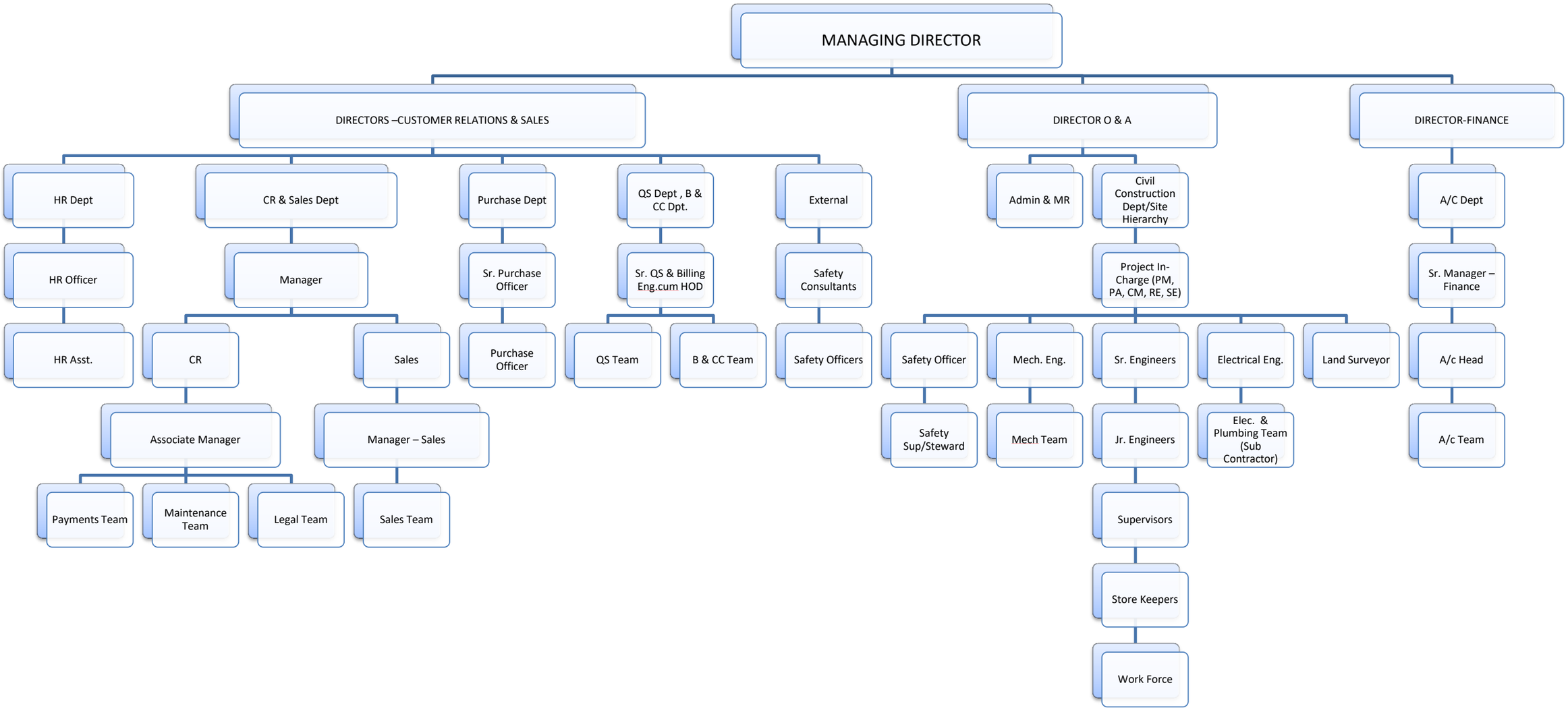

Figure 6.3 Organization structure

6.3.3 Interviewee profiles

Table 6.3 Interviewee profiles

Sl no	Designation	No of interviewees	Interviewee Code
1	Managing director	1	OI21
2	HR-Department	1	OI22
3	Billing and Contracting	1	OI23
4	Quantity surveying	2	OI24
			OI25
5	Site division	1	OI26
	Total	6	

6.3.4 Performance Appraisal Process in the Organization

OI22 explained how the PPA system in the organization.

> "*O2 is practising appraisal system since 2009. Here in this organization when we were establishing appraisal system, a group (including head of the departments, managing directors, directors of operation and administration, human resource manager) has set the Key Result Areas based on job responsibilities for employees. Based on Key Result Areas (KRA) and performance, the employee is being evaluated. Roles and responsibilities are communicated to the employees orally at the time of employee recruitment and also mentioned in the documents*."

OI24 said that

> "*Performance appraisal is being conducted twice in a year. Self-appraisal is a part of the appraisal process, but, this has no weightage in the appraisal process. The first appraisal is conducted to monitor the performance of employees. The second appraisal is conducted as a formal appraisal and considered for monetary and other benefits such as promotions*."

Self-appraisal is made a part of the appraisal process to make sure that employees are aware of their responsibilities. The first appraisal is considered only for employee's developmental purposes and not for monetary benefits.

According to OI22

> "*To encourage our employees, we have the best performer award, which is given away twice in a year, where we believe it would motivate the employees*".

Also, the organizations give special attention to the new employees, specifically freshers, by the manging director itself. Each department's head monitors performance. Feedback and guidance are given to the employees. Training is given to the employees to improve their skills if necessary. Below fig outline the PPA process in O2.

Figure 6.4 PPA system in O2

6.3.5 Shortfalls in the Appraisal System

When the questions were asked about challenges faced by them during PPA, OI21 said that,

> "*In my experience, employees expect a lot from this process because they get monetary benefits. When they don't get the expected outcome from this process, behavioural changes could be observed with the immediate supervisor or with colleagues. Here, disappointment is shown in the form behavioural changes by not coordinating and also delays from their side. But that's human nature. It takes time to accept things*."

According to OI23

> "*Sometimes, when an employee's performance is not up to the mark, by considering his past performance, the appraiser might have to give a better rating than what he deserves, hoping that he will improve in future".*

The interviewee explained the situation when an employee is excellent at work; there may be a decrease in performance due to various reasons. The appraisers experience a dilemma with good performers.

OI21 explained about after feedback

> "*There were two types of cases about performance feedback I have faced, every time we try to give feedback constructively.*
>
> *After feedback is given, different behaviours we have seen. Few of them have improved and worked on it while the others failed to take the feedback positively. It also depends on the person whether to accept it positively or negatively*".

OI25 said

> "*No organization is an exception from internal politics, behavioural problems, problems between employees and supervisors. These are common issues we face. However, it doesn't affect our performance, but it did affect the appraisal*".

The above paragraph explains the interpersonal relationship effects on the appraisal.

According to an employee who works at the construction site

> "*I work at the site, managing and maintaining labours is difficult. Sometimes, working without time constraint becomes much more difficult. Other than monetary benefits we expect little appreciation and recognition in the organization".*

When the nature of the job is challenging employee expects appreciation. Recognition motivates employees to work, which is one of the main reasons for employee retention.

OI22 "*During appraisal time there would be tension built-up among the employees, which is created by peers. Anxiety is usually found in new employees. As employee gets experienced in his job, performance appraisal becomes a routine process*."

6.3.6 Performance Dimensions for the Employees

The appraisal form was collected from the HR department. KRA includes Productivity, Communication, Cooperation, Problem-solving and Teamwork, Cross-Cultural Competence, Punctuality, Discipline, Time Management, and Customer Focus. This organization has a single form for all employees irrespective of designations. Though the organization chart is clearly defined, from observation and interaction, it is noticed that MD leads the organization with the help of five department heads. In this organization, there is no technical cadre classification. The PA process does not apply to employees who are below junior engineer designation in the organization. If the employee is below the junior engineer level, they get fixed annual benefits. However, informal feedback is given to the employees wherever necessary. The PDs were identified are as follows

Quantity of work done: Appraisers always prefers to evaluate an employee by the quantity of work done.

Discipline: According to OI21

"As an immediate supervisor, there were few dilemma situations such as few employees have a habit of coming late to the workplace, but the work would be done by them, in such situations, I had to concentrate on the work rather than coming on time to the workplace. In such cases, I would prefer the amount of work done and the quality of work done than concentrating on discipline issues. But, I strictly expect the employee to follow disciplines concerning work".

Coordination: Team coordination is essential to perform any work, which includes coordination among employees; between employees and top management.

Interviewees gave examples about coordinating with a team, missing coordination in site activities, etc. Coordination is a part of teamwork and this shows how well an individual could contribute to the entire team and organization.

Professionalism: Appraiser expects candidates should have job-related skills or interested to learn related skills.

Trust: Building trust among the employees so that organizations could rely on employees for their selected work. One of the interviewees mentioned this in the context of being loyal to the organization.

Communication: Conveying the subject or information plays a significant role though there is internal communication among all the employees and top management. If the information is not communicated correctly, it is going to affect the work and as well as employee performance. Both appraisee and appraisers strongly expressed this dimension; employees need to be *interactive* with their subordinates and superiors too. *Language* matters a lot while communicating with labours or site supervisor

Job Knowledge: The employer/immediate supervisor expect to have practical knowledge about their work. According to employee's job roles and responsibilities, employers expect mainly drawing interpretation, software knowledge, knowledge about equipment and technical skills

Appraisers and Appraisees mentioned a few dimensions such as timely responsiveness to the subordinates, adaptability for any situation, team building capacity, or leading capacity. The appraisal form consists of more qualitative dimensions and quantitative dimensions are supposed to be described by the employees. The input for technical cadre level was less. However, the PDs were identified for three levels and as given in table 6.3.

Table 6.4 Performance dimensions identified by O2

Decision Makers	Coordinators	Technical Cadre
Job knowledge Communication Leading Capacity	Job knowledge Communication Leading Capacity	Quantity of work done Time management Trust

Team building Timely responsiveness	Team building Timely responsiveness Professionalism Trust Discipline Adaptability Quantity of work done Technical skills	

6.3.7 Key observations from case study 2 (O2)

Formal PPA system is being practised biannually, including self-appraisal. Appraisal of an employee takes place based on the KRA established by the group, including Managing Director, HR manager, all head of the departments, and immediate supervisors. This case provides a clear perception of appraisers and appraisees and how they are facing PPA. The dilemma which appraisers faced while evaluating the employees and problems during appraisals such as pleading nature of employees, behavioural changes, and not accepting feedback in a positive manner is explained. Employees described the challenges faced during appraisals about the appraisee issues such as politics among the employees, relationships with managers and employees; this has always affected the evaluations. Employees are aware of the PPA system; there is no evidence for the communication gap. Most of the employees are satisfied; the way PPA is conducted in the organization. Employees mentioned the performance dimensions mostly, which are there in their forms, and others helped identify dimensions which are given in table no 6.2. There are limited numbers of employees; thus, the organization has handled the PPA system well.

6.4 Case 3

6.4.1 Organization Details

Name: *Organization 3 (O3)*

Established: *1992*

No. of Employees: *25*

Annual Turnover: *5-10 Cr INR.*

Location: *Dharwad*

6.4.2 Organization Structure

This is a small organization run by 5 partners having 20 plus years' experience in the industry and completed many commercial and industrial projects in Hubbali and Dharwad region. Organizational structure is shown as described by the interviewees in fig 6.4. Here the interviewees are coded as OI31, OI32, etc.

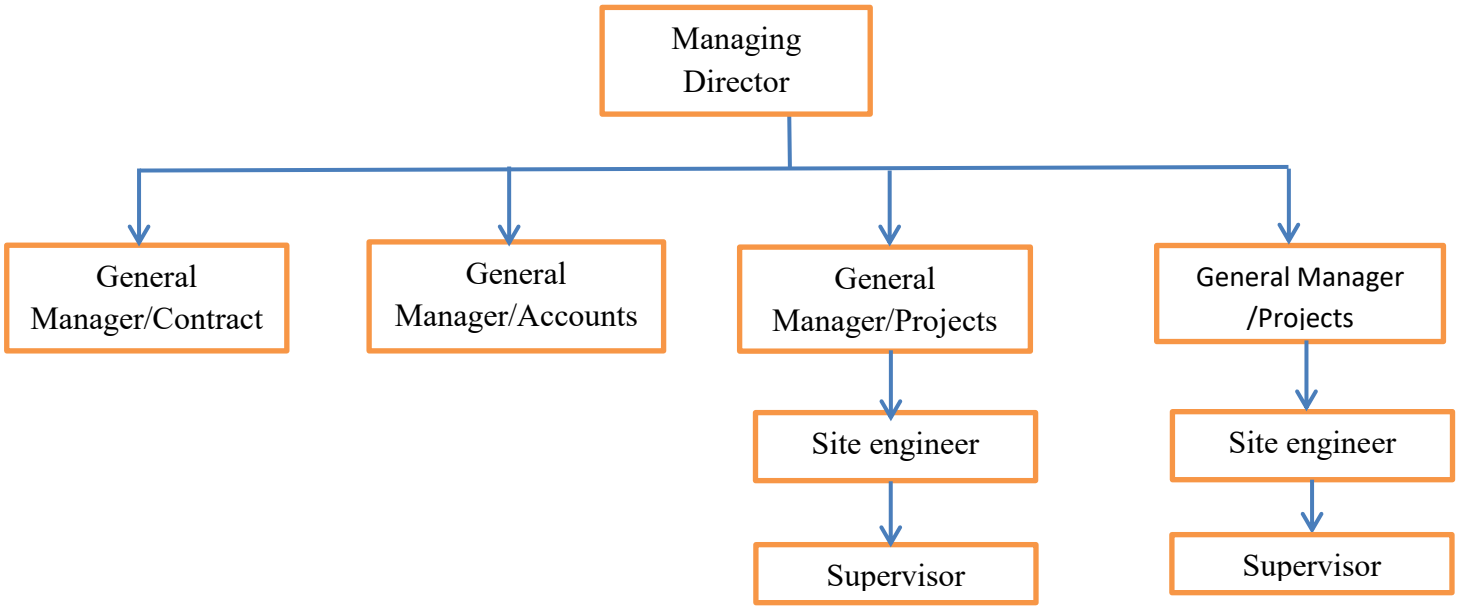

Figure 6. 5 Organization structure (O3)

6.4.3 Performance Appraisal Process in the Organization

Interviewee OI31 said

> *"Ours is a small organization, for us retaining employees, getting projects, maintaining labours and balancing all together is a big task. I am aware of PPA, but applying theoretical things is not applicable here."*

This organization is practising informal performance appraisal. Roles and responsibilities are communicated to the employees. Employees are instructed about their duties and again while doing a job they will be instructed

This organization does not have any management classification. General Managers handle most of the works. The other employees are supposed to follow the instructions given by them and complete the work within set time. Performance dimensions would be based on the type of work. Once after the work is monitored, immediate feedback is given by the supervisor whether it may be positive or negative. Observation method is used to measure the performance of an employee. The employee will be appreciated if he/she performs well on the job. According to OI32

> *"For those who are working with us from long time, it is mandatory to give benefits other than salary*".

> "*Nowadays employees are aware of benefits even they do expect from the organization other than salary such as flexibility in work and to some extent we have given the same.* Balancing employees and work becomes difficult for small scale organizations

6.4.4 Shortfalls in the Appraisal System

There is no formal appraisal practice in the organization. This research was intended to study shortfalls in the formal process. However, performance evaluation is done through an informal process by observations. There are few employees; hence it is easy to manage and to keep them on track. Continuous interaction between the employees and supervisors has led them to maintain a good relationship. There were only two interviews and thus information about shortfalls was not obtained and everything seems to be meticulous.

6.4.5 Performance Dimensions for the Employees

Though there is no formal appraisal practice, According to OI32

> *"We do not have a formal appraisal system, but we measured based on the quantity of work completed, from my experience, I can judge the potential of an employee who is working with us. We do see a few attributes and consider giving increment. Trust, committed, honest, involvement, able to handle labours, time management, coordination, verbal communication, interest towards work, effort, etc."*

6.4.6 Key observations from case study 3 (O3)

The informal appraisal is used to appraise the employees. The informal practise has engaged the employees continuously through constant interaction and communication. The organization is small, so the expectations of appraisees are also less, and very few dimensions exist. From the interviews, the PPA process in the O3 can be portrayed as below.

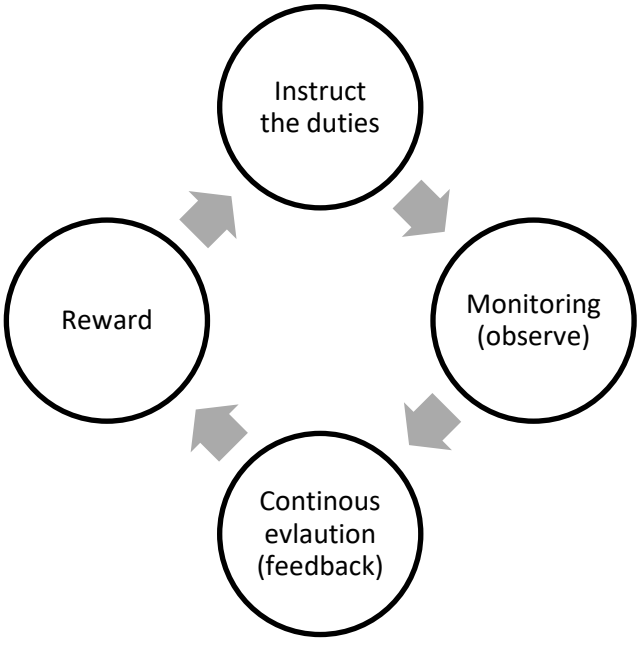

Figure 6.6 PPA system in O3

6.5 Case 4

6.5.1 Organization Details

Name of the organization: O4

No of employees: >500

Annual Turnover> 500 crores (INR).

Location: *India*

6.5.2 Organization details

O4 is India's largest construction organization and ranked among the world's top 30 contractors. It has been over the past seven decades transforming cityscapes and landscapes with structures of immense size and grandeur. The company's capabilities span the entire gamut of construction civil, mechanical, and electrical and instrumentation engineering and its services extend to all core sector industries and infrastructure projects.

6.5.3 Interviewee Profiles

Table 6.5 Interviewee profiles

Sl no	Designation	No of interviewees	Interviewee Code
1	Project manager (Projects)	2	OI41- OI42
2	HR-Department	2	OI43- OI44
3	Assistant Construction Manager (Mechanical)	4	OI45- OI48
4	Assistant Construction Manager(Civil)	4	OI49- OI412
5	Assistant Construction manager(Electrical)	2	OI413- OI414
6	Senior Engineers	6	OI415- OI420
7	Technical Persons	3	OI421- OI423
	Total	**23**	

In this case, the interviewer attempted to cover different profiles in the organization. The interviewees are codded as OI41, OI42 up to OI423.

6.5.4 Performance Appraisal Process in the Organization

This organization is one of the largest organizations in India. HR department is active by conducting training/developmental activities right from the site level to office level. As a part of HRM functions, PPA is held annually. Establishing performance dimensions for all employees is a tedious process. However, the HR research team has established PD's and communicated to employees. PDs communicated through a well-designed induction program. The immediate supervisor also communicates with the employees.

OI44 gave a brief about performance evaluation. Performance goals are set along with the immediate supervisor where there is a chance of negotiation to set the goals. These goals are narrowed down and set as goals to below cadres. These goals are monitored regularly and discussed with the immediate supervisor through meetings. Meetings are concerned about tracking of goals and completion of work. Once a year, formal feedback is given to individual employees

OI42 said about the PPA process in the organization

> "*The individual who gets recruited they would be informed/instructed/introduced about the organization's mission, objectives, and goals. Specific performance goals/dimensions are communicated to the employees by their immediate supervisor. Performance evaluation starts with the self-evaluation of employees. Self-appraisal forms are to know how employees have perceived their work, their achievement; also some time and self-appraisal form serves as a tool for the appraisers to evaluate the employees. Self-evaluation is mandatory for all the employees of the organization, and through online it is done".*

After self-appraisal, the immediate supervisor evaluates the employee based on the self-appraisal, appraisal form provided to them, later it is assessed by higher authorities. Based on the employees' cadre, the evaluation would be conducted. For manager and above level cadre, employees have to undergo the process twice in a year just to keep track of overall work and team performance.

According to OI41

> *"As an individual contributor, as a team contributor, employees are measured based on performance dimensions in a different context. Formally or informally continuous feedback is given to the employees about the work or performance wherever necessary. Those who perform well, for example, if an employee at the site performs well at his job, he would be rated well by his project manager and could be recommended for promotion. The project manager should justify his recommendation and could be sent for the promotional interview. An interview could be based on their achievement, potential of the candidate. If an employee can clear the interview, he would be promoted to the next cadre. His promotion is linked with salary and recognition".*

OI41briefed about the promotion that takes place at the organization

As per theOI41,

"We consider the past performance rating, but it is a very rare case that employees are identified as underperformers".

For the underperformers, training and feedback have been given to improve their performance and worst-case scenario, organization may terminate the employee. He also added that the organization has the best PPA system in the construction sector.

OI42 said

> "*The organization believes up-gradation of employee's knowledge, skills are essential from the employee point of view and business point of view. The company is providing self-learning courses, certification, and training to upgrade employees".*

This organization has several programmes to claim on improving the employees. The organization recognizes best performers and employees and may get an early promotion and monetary benefits. At the time of case studies, the organization was

moving out from the traditional method of appraisal to digital process to bring transparency with other benefits.

6.5.5 Shortfalls in the Appraisal System

The organization has been systematic about conducting the PPA and made sure it reached all the employees of the organization by making it compulsory to all.

PPA OI48 said about PPA

> "*In my experience, I did not face any challenges related to appraisal, the appraisal that depends on whom you are working with, my boss is supportive, encourages learning, has given the freedom to make a decision, and gives feedback in the right manner*".

The organization has projects all over the country; employees have been recruited from every part of the country. The first thing noticed when it comes to the appraisal is that the appraiser is being biased to their native state employees. As stated by OI44

> *"There has been a lot of bias towards the native state employees even though I perform well in my job. Their first preference would be their native state employees."*

The second thing was interpersonal relationships. According to one of the interviewee OI47

> *"Those who have been nice to the appraiser, more chances of getting high rating during the appraisal, also the attitude with the appraiser matters a lot though I complete my tasks as they expect."*

As observed from the interviewees, appraisees are unhappy about the bell curve system where the organization will identify some employees as top performers, average performers, and remaining required improvement in performance. As per the policies, every employee should fit in any one of the categories.

From appraisee perception; OI49 and OI410

"Because of bell curve system only a few employees get benefits out of it, if good performers are more in number that affects the employees and I have been through it and it's just pushing people where they don't belong to".

"Appraisers know how to fit the employees in the bell curve; they do somehow, because of this even I got delayed in getting the promotion".

From an appraiser perceptionOI41

"It is difficult to promote all the employees, that's why we consider past three years of performance and decide to whether to promote them or not and also, we have our HR policies and criteria".

The above interviews showed the perspectives of an appraiser and an appraisee. Both of them reflect extreme ends of the spectrum where one is in complete agreement and another in complete disagreement of HR policies.

OI417 says

"The appraisal depends mainly on the oiling and buttering that one does to the boss. This happened to me."

Similarly, OI420, OI423 explained the interpersonal relationship effect. Most of the interviewees mentioned about interpersonal relationship effect, which strongly indicated bias towards employees.

OI419 said

" Once the self-appraisal process is completed, we have not notified the reason behind our rating, i.e., proper feedback from our superiors is not reached which results in de-motivation and hatred ness towards the system and sometimes even towards the organization."

OI419 mentioned that feedback was not given correctly, and other problem was highlighted that feedback was not given on time.

Major issues such as communication of performance goals, the communication gap between top management and middle management, feedback issues, politics in the organization, not accepting feedback were identified from the interviews. Interviewees identified the list of shortfalls which employees are facing. Most of the interviewees repeated the same thing and believe that PPA is flawed, subjective, and unreliable.

OI413 said

"In this organization, 75% of employees are in based in different sites and rest 25% of employees are based in the headquarters and other offices. The people who are based in sites are always working with different teams depending on the project requirement. Each time explaining the deliverables delivered in the past and your calibre to a new boss who is newly appointed is a mammoth task.

OI413 explained how performance appraisal gets affected because of the nature of the industry. But this kind of environment is quite common in project-based industries, as discussed in chapter 4.

6.5.6 Performance Dimensions for the Employees

The key result areas (KRA) or key value drivers are set by the organization based on Specific, Measurable, Attainable, Relevant, and Time-bound (SMART) goals which are for all the employees in the organization. The organization has developed its competencies based on technical skills, knowledge, and behaviour. Depending on the role played, these competencies were compared and performance is evaluated. The documents related to this were inaccessible as they were confidential. However, based on PA form and interviews, this study attempted to identify the competencies (PDs) through interviews.

The organization has two separate appraisal forms, one for technical cadre employees and another for middle management and above. The dimensions for middle management and above are found to be the same. Other than performance dimensions, the employees have to describe their achievements or anything related to the improvement of performance. The performance dimensions are found in appraisal

forms and are already mentioned in the survey, other than that which was not mentioned in the form are listed in the table no .6. 5

OI46 said that

> *"Technical cadre and middle-level managements (up to manger level) they have only one annual review. Manger level cadres they have a mid-term review and final review. Managers have to set their targets based on those reviews will be conducted for them.*

> *"Performance is measured based on the number of projects, and milestone achieved etc."*

According to OI41

> "*Manager and above cadre get evaluated based on the revenue generation, contribution to the business. Example: a general manager is responsible for many numbers of projects. His performance is evaluated based number of projects, targets achieved, revenue generated mile stone achieved etc. The project manager will be evaluated based on project, and related dimensions, similarly cadre wise the targets get decreasing.*

The most common dimensions are found in all levels are adaptability, honest, job knowledge, qualification, experience. Rest is based on interviews and PDs have been categorized in table 6.4.

OI422 gave a list of dimensions for technical cadre

> *"We have been given target by the engineer we are supposed to finish that work within time. I think our performance is evaluated based on the quantity of work done that is measure by NOC reports, time management and less rework.*

Important dimensions identified from the interviews are

Subordinate development: This applies to managerial cadre and above employees. Managers have teams under them. As a leader, it becomes essential to take his team forward and work as a team, bypassing the knowledge and skills to the subordinates

Revenue Generation: This applies to managerial cadre and above employees. When an employee is in manager position, the organization expects him to contribute through revenue. His/her performance would quantify in terms of business, number of contracts, number of invoices created, etc.

Milestones achieved: Milestone indicates the development or progress in the project along with the project timeline. If this is achieved, it shows employees are on the right track.

Cost parameters: It involves monitoring the cost of the project. The employee gets evaluated based on how much he has saved, whether it is within budget or over budget.

Rework: This is related to the quality of the work done. Appraiser observes the track record of rework during the project in a certain period of time. Rework increases job cost as well as project costs.

Most of the performance dimensions are discussed in different case studies. In this case, interviewees highlighted the same dimensions as discussed in previous case studies.

Table 6.6 Performance Dimensions (O4)

Sl.No	Top management	Middle management	Technical Cadre
	Adaptability	Adaptability	Adaptability
	Honest	Honest	Honest
	Job knowledge	Job knowledge	Job knowledge
	Qualification	Qualification	Qualification
	Experience	Experience	Experience
	Development of business	Customer/Client relations	Monitoring
	Revenue Generation	Innovation	Quantity of work done
	Adaptability	Creativity	No of drawings produced
	Honest	Development of Subordinates	Safety measures

	Job knowledge No of projects Customer/Client relations Innovation Creativity Development of Subordinates No of Construction package approved Cost Control Decision making Communication Leadership quality Problem solving Initiative Team building	No of Construction package approved Cost Control Decision making Communication Leadership quality Problem solving Initiative Team building Monitoring No of drawings produced Safety measures a) Lost time Accident b) Safety Man Hrs Quality Measures a) NOC Reports Reduced man hrs Wastage reduction	c) Lost time Accident d) Safety Man Hrs Quality Measures b) NOC Reports Reduced man hrs Wastage reduction

6.5.7 Key observations from case study 4 (O4)

The organization conducts a formal appraisal system, including Self Appraisal system annually. The PPA system appears to be systematic and mandatory for every employee. Goal setting takes place along with immediate supervisor, and annual performance feedback is given. Mixed response was observed from the interviewees. Some of the employees have a good opinion about the PPA system. Some employees believe that PPA system is subjective and flawed. Since the number of employees is large in number, PDs are also more with respect to different designations. This organization consists of three levels of management, and PDs were identified are given in table 6.4. From the interviews and documents the PPA process is portrayed as below.

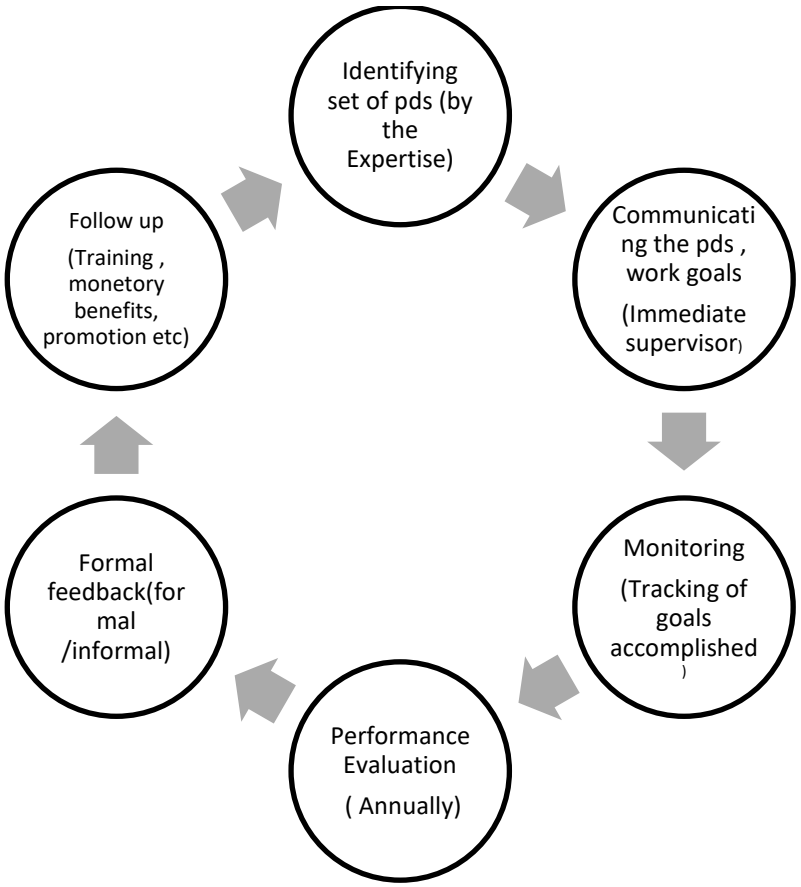

Figure 6.7 PPA system in O4

6.6 Summary

This chapter presents four case studies, where each case is unique and gives different views. These case studies aided in analysing the present PPA systems in construction contracting organizations with respect to appraisers and appraisees.

The main aim of the organizations is to achieve their goals. The employees perform various tasks which are assigned to them by immediate supervisor, who in turn makes sure that these goals are aligned with organization's goals and objectives. This is the common trait observed in all the four cases. Another observation is that organizations do implement the PPA systems, however they may follow formal or informal appraisal systems. In addition, it is also observed that few major issues raise concern. Communication, behavioural changes, and interpersonal relationship are some of the issues. The major part of the PPA system is to identify the PDs. Case studies helped identify the PDs to evaluate the employees at three management levels. Identified dimensions are summarised in table 6.2, 6.4, 6.6, and 6.8. In addition, it is observed

that interviewees emphasised more on quantitative measures rather than qualitative measures. This indicates the cost-conscious nature of construction organizations. Balancing these two dimensions is one of the crucial aspects of the appraisal system in the organizations.

It can be noted that O1 focuses on the completion of the assigned job and tend to overlook PPA practices. Hence, there is a need for improvement in PPA practices. O2 and O4 have been practising the PPA systems for effective assessment of employees' performance and their career development. It is observed that in O4, PPA plays one of the essential roles in retaining competent professionals.

Organizations studied are having different practices, O1 and O3 do not follow self-appraisal practices whereas, O2 and O4 have formal self-appraisal systems. O2 and O4 are using self-appraisal as a supplement to PPA. The case studies describe different scenarios such as large organization with formal appraisal, medium sized organization with negligent practices, medium organization with formal appraisal, and small organization with informal appraisal system. The organizations are practicing PPA at their convenience. These scenarios indicated that there is a need to homogenize the PPA systems in the Indian construction contracting organization. The findings from results of Quantitative analysis using factor analysis and the case studies boosted the development of the PPA systems framework for CI.

CHAPTER 7

PROPOSED FRAMEWORK AND ITS APPROPRIATENESS

In this chapter, findings from chapter 5 and chapter 6 are integrated to develop a Personnel Performance Appraisal (PPA) framework for construction contracting organizations. The framework is assessed for its appropriateness with the help of experts from construction industry. This proposed framework is expected to help the organizations to align the PPA to HRM objectives and efficiently implement the same.

7.1 Steps involved in developing the framework

This section details the steps involved in developing the framework by using multiple methods. These steps are as shown below.

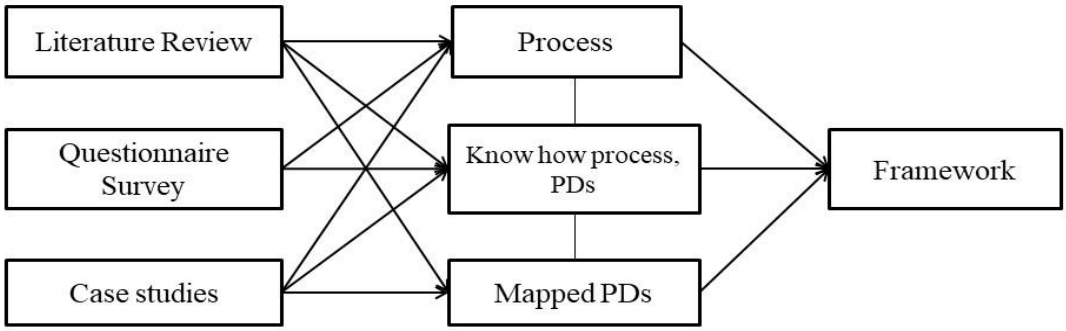

Figure7.1 Steps involved in developing the framework

The literature review contributed to understanding the PA systems, basic concepts of PPA systems, and its practices in the construction industry. PPA system includes various stages and these stages are practised commonly across CI. The stages involved in the PPA process are directly cited from Chapter 2. Findings from the questionnaire survey and case studies demonstrated that the stages of exiting the PPA system are similar to the ones mentioned by Loosemare et al. (2003).

Chapter 4 illustrated the nature of CI and what has impacted the management practices and the need for improvement in the PPA practice. The shortfalls and PDs identified from existing PPA systems from the perspective of construction personnel are captured from Chapter 5 and Chapter 6. Also, Chapter 6 gave insights into the PPA systems, and the challenges involved. Variation in perceptions of respondents as

shown by descriptive statistics made shortfalls in the PPA system challenging to conclude. Similarly, there are mixed perceptions towards the shortfalls in the PPA systems. From questionnaire survey and case studies, communication, behavioural changes, interpersonal relationship, central tendency effect and horn effect were found to be some of the common issues.

The know-how of the PPA systems is directly drawn from the case studies. Also, semi-structured interviews helped to classify and map the PD's to three levels of management of construction organization. Knowledge gained from case studies is developed into a framework for the PPA system in the context of construction contracting organizations. This proposed framework is expected to aid the desired outcome of performance practices, which ultimately influence the HRM outcomes. The framework addresses effective practices that could be incorporated in the PPA system of the organizations will minimise the issues that could arise.

The developed framework consists of 6 stages, whose elements are shown in fig 7.5. Each stage of the framework are discussed below along with key criteria are to be considered. This framework provides a simplified version of the PPA system. This framework is validated with the help of experts which is further discussed in section 7.2.

7.1.1 Stage I- Identify and establish performance dimensions

The first stage is identifying performance dimensions for the employees. At this stage, the organization has to identify PDs for its employees with respect to job and responsibilities, aligning with team, and organizational goals. Based on the results of questionnaire survey and case studies, PDs are identified. These dimensions are classified into two areas i.e., qualitative dimensions and quantitative dimensions.

a) *Qualitative dimensions:* Qualitative dimensions are obtained by triangulation of questionnaire survey and interviews. The identified KPDs are communication, technical skills, interpersonal skills, intrapersonal skills, and availability. Each KPD consists of performance dimensions obtained by the statistical results as shown in section 5.5. In addition to this, customer/client relations, innovation, creativity, ability to handle crisis, handling labours are few other dimensions obtained from the case studies.

b) *Quantitative dimensions:* Quantitative dimensions are the measurable dimensions. Dimensions were obtained majorly from the case studies. It consists of quantity of work done, financial parameters, personnel development, cost, late-night working hours, safety man hours, number of projects handled, and experience.

All PDs may not be relevant to all the management levels; hence three different levels are defined. From case studies, it is understood that there are differences in PDs with respect to the management levels and experience. Therefore detailed investigations are done on PDs and are mapped with respect to management levels. These different levels in an organization are a boundary line between various designations. These management levels define authority relationships, hierarchy, responsibilities. These responsibilities vary from employee to employee. As we move upwards in the hierarchy one has to perform or be aware of both managerial, technical tasks. Generally, management levels in the organization have three levels i.e. top management, middle management, and bottom level management. With reference to three levels of management, the dimensions are categorized corresponding to each level as Decision-makers (DM), Coordinators (CO), and Technical Cadre (TC) respectively. PDs can be prioritised if employee is involved in multi projects (Cheng and Li 2006).

Decision-makers: This group consists of experienced senior executive employees, heads of the various departments, managers, etc. These are a group of people who work together and lead the organization by setting objectives, policies, and strategies. Their decision plays a major role in the organization. The dimensions which are given in fig 7.2 are PDs identified for the decision-makers level. It is however subject to modification depending on responsibilities handled and the organization.

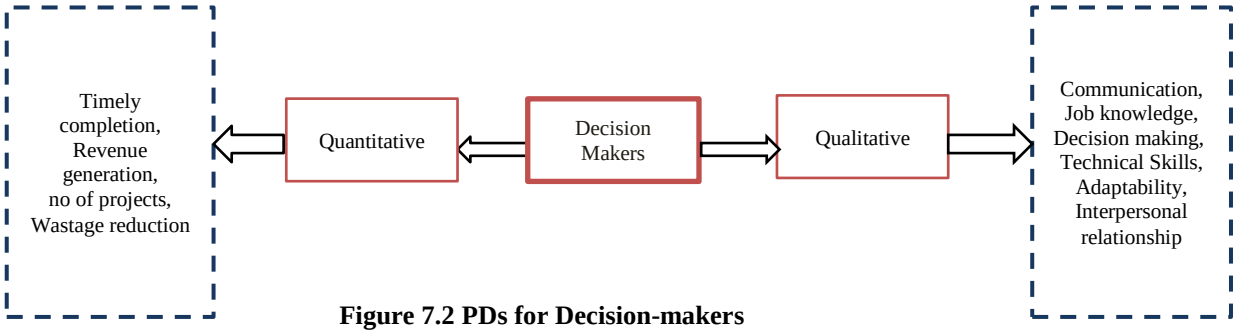

Figure 7.2 PDs for Decision-makers

Coordinators (CO): This level has covered site engineers, contract department, planning and billing, and safety department. Coordinators come below decision-makers and above executors in the organization hierarchy. Coordinators form the connection between decision-makers and the executors by helping them complete the project successfully. The dimensions which are given in fig 7.3 are the PDs identified for CO level.

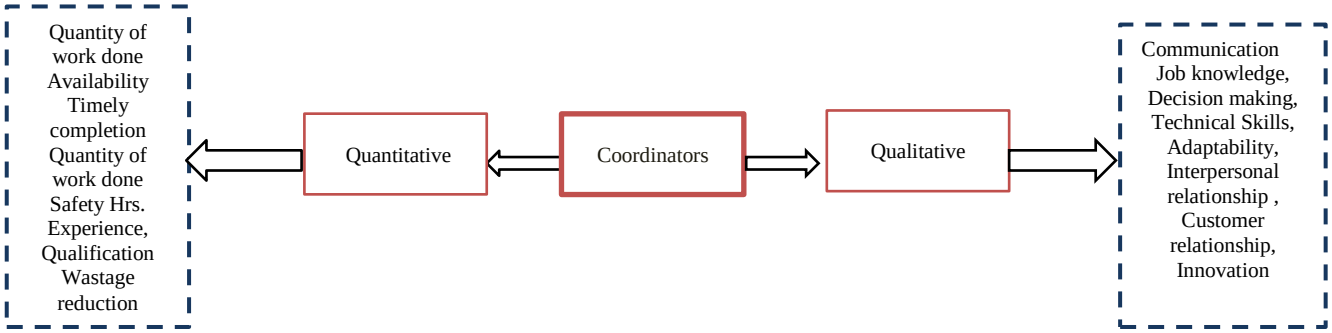

Figure 7.3 PDs for Coordinators

Technical cadre (TC)/ others: This level majorly covers the dimensions for personnel such as surveyor, draughtsmen, and supervisors. Technical cadre work below the coordinators. This level depends on the categorization followed by the organization. If the organization has a classification for technical cadre, this would be applicable. In case of organization 3, the number of employees is less; thus, there is no classification as technical cadre. The dimensions which are given in fig 7.4 are the PDs identified for TC level.

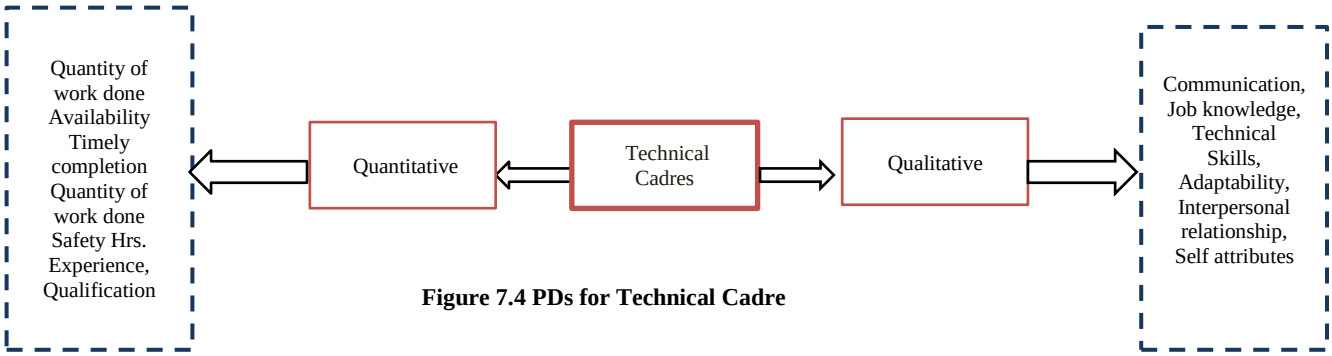

Figure 7.4 PDs for Technical Cadre

7.1.2 Stage II- Communicate dimensions to Appraiser and Appraisee

This stage consists of communication of PD's from DM to Coordinators and then from Coordinators to Technical Cadre. Communicating PDs effectively to the employees is responsibility of the immediate supervisors. Regular communication between the appraisees and supervisors gives clarity about work and supervisor's

expectations. Goal setting for the employees should involve both immediate supervisors and appraisees. The goal-setting process is applicable at this stage and it has been discussed in section 2.2.1.1. After this process, the goals and PDs have to be communicated verbally to employees. It would help while evaluating the appraisee. Documentation of goals plays a significant role in this process.

7.1.3 Stage III- Monitor the Performance

Monitoring the performance is nothing but keeping an eye on the employee's actual performance. The supervisors should know the actual target and performance. Monitoring is a continuous process in the organization, whether it may be for an organization or individual employee. The most common method to monitor and measure the performance is by observations. Along with observation, monthly review meetings, weekly meetings, updates related to work, or project helps to keep track of employees as well as the project. At times when observation of individual employees is not possible; these review meetings ensure that employee performance is on track or not.

7.1.4 Stage IV – Measurement of Performance and Comparison with PD's.

Measurement and monitoring are lengthy processes. The performance appraisal evaluation has to be error-free, should be able to identify the employee training needs and should be encouraging, motivating, cost-effective (Jafari et.al.2009). While measuring the performance, errors are common. The common errors in the existing PPA systems are found in this study and presented in chapter 5 and chapter 6. To avoid the biases and errors, MBO is recommended, as it involves both appraisers and appraisee to set the goals. Employees get evaluated according to their goals. No other methods include appraiser and appraisee for the goal-setting process. Different methods were discussed in section 2.5.2.1. Studies have shown that MBO method is considered as the best method for performance evaluation (Jafri et.al. 2009;Islami et al. 2018). Also, keeping the development of the employee as the objective, MBO, and Self-appraisal method is encouraged. Self-appraisal would give insight into employee performance and it connects the appraiser and appraisee. Also, self-appraisal helps the supervisors to improve the areas where employees are lagging (Boice & Kleiner 1997). Once the appraisal process is completed, the ranking method can be used to identify the standing of the employee in an organization, provide

benefits, encourage them, train them, and help them for career advancement purposes.

7.1.5 Stage V - Communicate and discuss the Performance to Employees

Organizations should conduct appraisal at least twice a year which ensures that the supervisor's goals are achieved. This would help supervisors for reassigning the goals if needed. After the evaluation stage, the results of performance review should be communicated to the employees through one-to-one feedback. Performance feedback plays a vital role in the PPA process. It helps to decrease performance ambiguity, supports personal development, makes it easy for adaptation to change, and improves superior-subordinate relationship (Kaymaz,2011). Performance feedback should be strength-based, motivating, encouraging, specific and appraiser should be aware of the job requirements (Aguinis et al. 2012). If it is held annually, the feedback is less effective as compared to feedback given biannually. At this stage, transparency is required so that the employee is well informed about the decisions.

7.1.6 Stage VI - Necessary Steps to Improve Performance and follow up

The appraisal results should be linked to the monetary reward, training, job-rotation, and promotions. Appraiser should facilitate communication with appraisers regarding training on current role, promotions, skills to be developed, problems and identifying difficulties related to the job (Cheng and Li 2006). This would be and effective step towards improving performance. Based on the performance, employees could be classified as excellent performers, average performers, and poor performers (Murphy and Cleveland 1995). The management can then decide upon the plan of action for each category.

7.2 Challenges and limitations in implementing the framework in an organization

This framework is expected to have clear performance expectations, regular feedback, improved communication, relationship between superior and subordinates. However this might be challenging to implement in the organizations without employee's support .The following are some of the challenges that an organisation may encounter while implementing this framework.

a) Acceptance of new system from the employees, organization. In broader terms, transition from one system to another is challenging as it may encounter resistance from employees and organization.

b) This framework requires commitment from the employees to make it work, as it involves both appraiser and appraisees.

c) Goal setting process has to be done appropriately which involves the specific dimensions for an employee. This may be cumbersome and time consuming.

d) The effectiveness of the framework would be increased when the organization consider it as both developmental and administrative tool.

e) The contextual factors such as structure, management style, organization policies and culture are not considered.

f) This framework is limited to only MBO evaluation method.

7.3 Theoretical Validation of Framework

Various frameworks have been developed by Boice and Kleiner (1997), Armstrong (2006), Pritchard and Denisi (2006), Atkinson (2016) in the domain of performance management and appraisal. However, these frameworks are generic and more focused on the process. Other frameworks concentrate on specific aspects of PPA rather than entire system such as effectiveness of PA by Piggot and Irvine (2003), Caruth and Humphreys (2008), purposes by Iqbal et al. (2014) and social context factors by Levy and Willams (2004), Pichler (2012). These frameworks were reviewed and taken into account wherever possible. The proposed framework is compared with the existing framework i.e. Fig (2.2) by Pritchard and Denisi (2006) for validation purpose. The main purpose of the both frameworks is to improve the performance of an employee, hence compared. In this framework, the process is adopted by the results of case study and questionnaire which is reaffirmed by Loosemore et.al (2003) in the context of CI. Expectancy model for motivation is adopted by exiting framework. Further, the details of these two frameworks are given in the table 7.2.

Table 7.1 Validation of framework

Parameters	**Proposed framework**	**Framework by Pritchard and Denisi (2006)**
Objectives	To propose personnel performance appraisal systems to deliver desired HRM outcomes in construction contracting organizations.	Proposed a motivational framework for improving individual performance by performance appraisal
Implementation	Indian Construction Industry	Applicable for all organization
Focus	Integration of PDs to appraisal process	Individual performance improvement.
Findings	PPA Framework specific for construction contracting organizations	Motivational framework
Factors considered	a) Quantitative and qualitative dimensions b)Effective communication by immediate supervisor/HR, and documentation c) monitoring by observation, reports, meetings d)MBO method is recommended to evaluate an employee e) Bi annual feedback , strength based feedback f) Training/job rotation /benefits	a)Goal based objectives b)Clear statement and expectations c) Employee inputs d) Frequent feedback including formal and informal feedback
Limitations of the study	a) Organization culture, management style, organization polices are not considered b)Applicable to only MBO method	a)Organization culture b)National difference

This framework is also compared with guidelines provided by Armstrong (2006) Fig (2.3). He suggested 360 degree method for the evaluation. Further he suggested to do a pilot test and to consider the organizational context, management style, culture before implementing into any organization. This is not been considered in the proposed framework, which is one of the limitations of the study.

7.4 Validation of Framework

In order to know the effectiveness of the framework in the real scenario, a validation exercise was conducted through an expert panel. The expert panel was chosen from the respondents who participated in the questionnaire survey and case studies, where

they already have experience of 20+ years. Three respondents from the questionnaire survey, and two interviewees from the case studies and further details given below in the table.

Table7.2 Expert panel profiles

Expert Panel members	Experience in Years	Designation
1	28	Managing Director of O2
2	30	Consulting Cost engineer
3	23	AGM(projects)
4	25	AGM(construction)
5	20	Project Manager at O4

Panel members are asked to assess the framework based on the following criteria.

a) Appropriateness of the performance standards and reliability of the framework

b) Clarity of the framework

c) Ease of practical application

d) Improving the framework with respect to construction contracting organizations.

The assessment is based on 5 points Likert scale, where 1- indicates very poor 2- poor, 3- average, 4- good, and 5- very good. The panel members are requested to provide comments and suggestions for additional requirements, refinements to improve the framework within construction organization context. The overall framework is assessed for its appropriateness, clarity, and practical applications.

Table 7.3 Validation results

Expert Panel Members	Appropriateness of the performance dimensions, stages of PPA system and its reliability of the framework	Clarity of the framework	Ease of Practical application	Improving the framework with respect construction contracting industry.
1	*4*	*5*	*4*	Overall it looks good
2	*5*	*4*	*5*	Satisfactory
3	*4*	*3*	*3*	If possible add, customer relation, vendor creation, optimum utilization of resources
4	*4*	*5*	*4*	Time management, Quantity of Work done, Behavioural dimensions are the Key dimensions
5	*5*	*5*	*5*	No Need
Overall	*4.4*	*4.4*	*4.2*	----------

From table 7.1, respondents are asked to respond to the validation questionnaire as well as provide qualitative comments for the improvement of the framework. Expert 2 mentioned that the framework has covered all the stages. Ultimately it is in the hands of the appraiser and the employee to make it a successful system. Expert 3 suggested a few PDs which are mentioned in the above table. According to him time management and quantity of work done, the employee behaviour are the major dimensions to measure employee performance. The same has been already considered in the framework. It appeared that the framework has covered all the stages of the appraisal which is well evident from the validation process (4.4 out of 5). Although there was a neutral response from expert 3 about clarity and ease of practice, the majority of the answers were considered for validation. The respondents found that the framework has clarity and can be easily practised (4.4. and 4.2 out of 5 respectively).

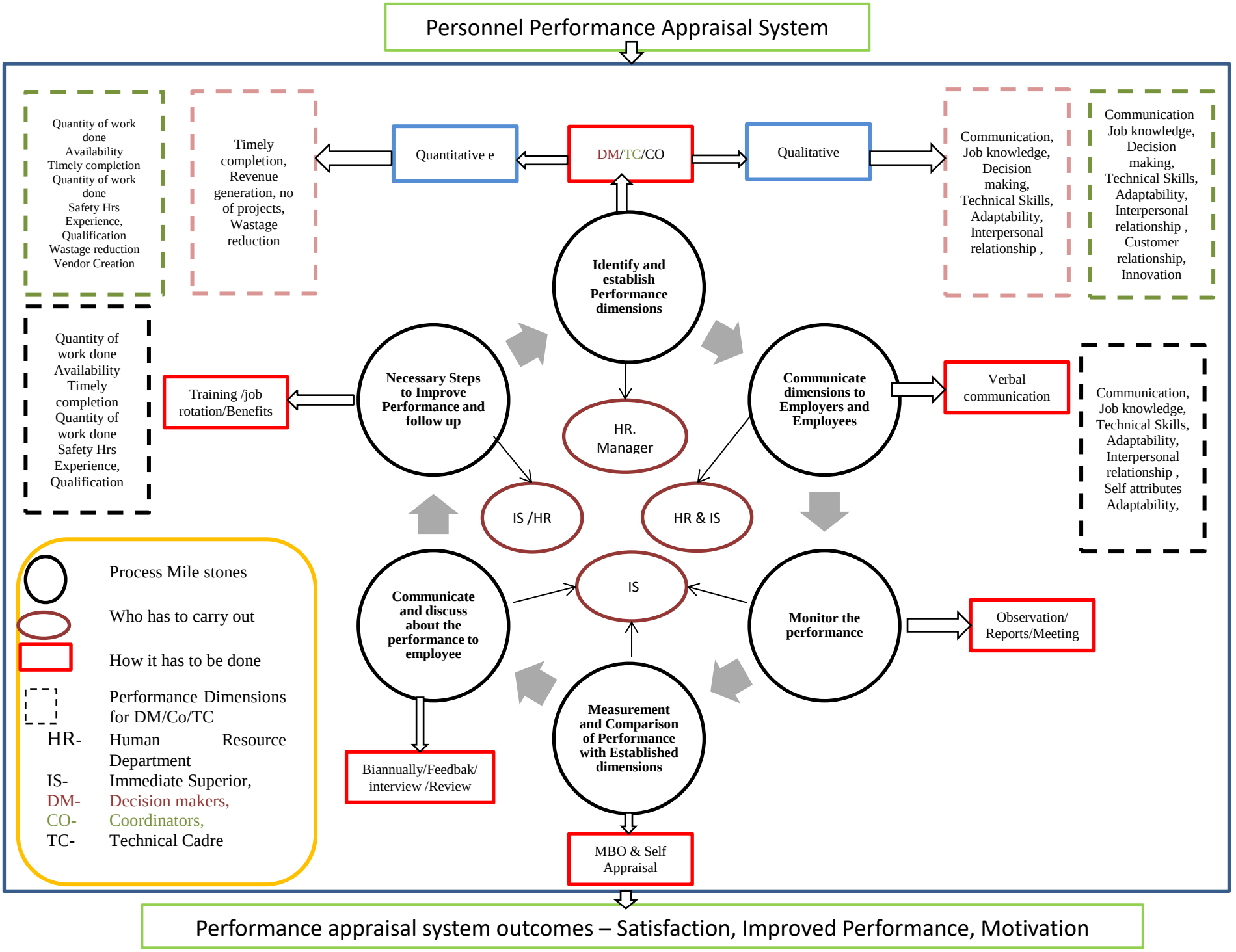

Figure 7.2 Proposed Framework

7.5 Summary

This chapter presented the steps involved in developing the framework. Proposed framework has explained different stages of PPA. In addition, PDs are classified into quantitative and qualitative dimensions and proposed in the framework which holds relevance to the construction industry. Challenges and limitations of the framework are given. Each stage of framework recommended the best-suited method to be adopted in the PPA system. Proposed framework is validated with an expert panel. Validation of results and feedback are presented based on appropriateness, clarity, applicability, and refinement. After validation, a final framework for PPA system is proposed.

CHAPTER 8

CONCLUSIONS AND RECOMMENDATIONS

The study began by reviewing the literature available in the area of PA intending to understand the PPA system, identifying PPA dimensions and shortfalls in construction contracting organizations. The literature outlines HRM and PPA practices in different sectors i.e. agriculture sector, industrial sector and service sector in India. Further, the PPA systems are examined in detail in the context of the construction industry. The research focused on identifying shortfalls in the industry that are hindering effective implementation of PPA and thus necessitates proposing a PPA framework that suits construction organizations. To achieve this, three research questions were posed and four objectives were set, and are explained in section 1.2.

A mixed-method approach consisting of a questionnaire survey, case studies including semi-structured interviews and document analysis are adopted for the empirical data collection. Conclusions drawn from the above data are summarized below. Also, key findings, implications of research, limitation of the research, and finally, directions for future research have been discussed in detail.

8.1 Conclusions and recommendations

The first objective is to understand the PPA systems. The initial study gives a glimpse of PPA practices of Indian industries and revealed that PPA depends on the nature of the industry, organizational goals and objectives. Two Case studies were conducted between IT organization and Construction organization. The research highlights that IT (service-based) organization and construction organization follow PPA systems; a noteworthy difference is that IT organization has focused more on HRM practices when compared to construction organization. This difference is due to various factors such as involvement of only skilled employees, higher awareness levels, better communication, the ability to adapt quickly to changing needs and monitoring the PPA system. These factors enable the PPA system to be executed systematically. Construction organizations can adopt the PPA practices by creating awareness among employees about PPA, effectively communicating expectations from employees,

monitoring the PPA system. This would eventually lead to the betterment of PPA systems. From this comparison, it appeared that there is room for improvement in PPA systems in the context of construction organizations. The empirical findings from questionnaire and cases studies about the nature of existing PPA systems in the construction organization context reaffirms that most of the organizations follow the PPA process as mentioned by Loosemare et.al (2003).

The second objective was to analyse appropriateness and identify shortfalls in PPA systems and develop Key Performance Dimensions. This study focuses on different shortfalls in the existing practices. Understanding the issues that are affecting the PPA system is important to minimize the same and appropriate interventions to help the organizations to achieve their purpose in a better way. This study reveals aspects such as communication of performance dimensions, timely feedback, level of engagement and fair evaluation that would satisfy the employees. The findings also indicate that change in behavior among the appraisees interpersonal relationship effect, past performance effect, lack of transparency are the common hurdles arising from the appraisers and appraisees. Human behavior is unpredictable, hence these hurdles are difficult to eliminate. However, the existing PPA practice needs improvement by being transparent, establishing effective communication between appraiser and appraisee, and reducing the bias of the measurement criterion.

Job performance refers to skills, competencies that are applied to a task to accomplish the organizational goals. Social conditions, culture, demographic conditions and work environment influences job performance. Change in work practices and technology demands the need for performance dimensions in the current context of the construction industry; hence revising or reconsidering the performance dimensions have to be done periodically. Construction organizations may follow the formal or informal system. Irrespective of the system followed, employers or appraisers need to have a criterion to evaluate the employees i.e. performance dimensions. This research identifies the PDs, which is an initial step in increasing the effectiveness of the PPA system.

Further, this research identifies 39 PDs which were grouped into 6 major KPDs and is discussed in chapter 5. Supplementing the study, the PPA process is reaffirmed

through empirical findings. In addition to that, additional dimensions obtained by case findings are considered. This research classifies the dimensions into qualitative and quantitative dimensions and these dimensions are mapped into three management levels and are further integrated into a framework. These dimensions will influence individual performance. Further empirical findings suggest that, communication of these PDs and goals with respect to job designations through immediate supervisor is recommended. Monitoring the performance through observation, reports, and progress meetings are found to be effective. MBO method is found to be the best method where it involves both appraiser and appraisee from the initial process of PPA. Performance feedback should positively reinforce the employee which would in turn motivate him/her. Based on the performance, employees should be given recognition, promotion, transfer, or training. Also, training is recommended to the appraisers to create awareness and to handle the appraisees also, appraisers are responsible for effective implementation of PPA.

The third and fourth objectives were about developing a framework and integrating the PDs in it and validating the same. Individual performance directly affects the organization and project performance. Construction organization needs to strengthen their performance measurement system. This research develops a framework for PPA system for construction contracting organizations and it indicates how, when, who has to conduct the PPA system in the organization and this is presented in chapter 7. Further, it is validated with a panel of experts.

Table 8.1 Findings from the study

Research aims	**Objectives**	**Findings**
To streamline personnel performance appraisal systems to deliver desired HRM outcomes in construction contracting	To study the existing Personnel Performance Appraisal (PPA) systems in construction industry and compare it with other industries.	➢ The research highlights that there is, a noteworthy difference, that IT organization has focused more on HRM practices when compared to construction organization. ➢ Construction organizations can adopt the PPA practices by creating awareness among employees about PPA, effectively communicating expectations from employees, monitoring the PPA

organizations.		system. This would eventually lead to the betterment of PPA systems. ➢ The empirical findings of the study about PPA system reaffirms that the organizations follow the process as mentioned by Loosmare et.al (2003).
	To analyze appropriateness and identify shortfalls in PPA systems; and develop Key Performance Dimensions	➢ Shortfalls in PPA This study reveals that communication of performance dimensions, timely feedback, level of engagement and fair evaluation would satisfy the employees.Change in behavior among the appraisees interpersonal relationship effect, past performance effect, lack of transparency are the common hurdles arising from the appraisers and appraisees. The existing PPA practice needs improvement by being transparent, establishing effective communication between appraiser and appraisee, and reducing bias of the measurement criterion. This study would help Understanding the issues that are affecting the PPA system is important to minimize the same and appropriate interventions to help the organizations to achieve its purpose in betterway This study would help in developing the framework for PPA system by considering the shortfalls and make it effective. ➢ Key Performance Dimensions.

		The initial step for the PPA process. This research identifies 39 PDs which are grouped into 6 major KPDs and are discussed. Case studies reaffirmed the PDs with additional PDs.
	To integrate developed Key Performance Dimensions in PPA framework.	➢ This research classifies the dimensions into qualitative and quantitative dimensions and these dimensions are mapped into three management levels and are further integrated into a framework. ➢ Recommendations for the PPA Process ➢ This research develops a framework for PPA system for construction contracting organizations and it indicates how, when, who has to conduct the PPA system in the organization
	To validate the proposed PPA framework.	➢ Validated framework

8.2 Contribution of research

This major contribution of the study gives insights about performance appraisal practices and focuses on holistic approach on the same that could contribute for effective PPA system in CI. The results of this research demonstrated that using mixed method approach to PPA systems can provide an extensive view of the process and its stages than a single approach could. The advantage of mixed methods including case studies and survey based approach gave the wide knowledge and perception of employees towards appraisal system which adds significance to the present PPA literature. The findings of the study mention the appraisal issues that need to be avoided. This study has classified PDs into quantitative and qualitative dimensions with help of mixed method approach. Further this study has been able to

draw out PDs at three levels that are significant for evaluating the employees in construction organization. The present study proposed a comprehensive framework based on the appraisal processes at organization level which is a major contribution. Each stage of PPA process framework recommended the best-suited approaches that can be adopted by CI. The recommendations include MBO method and bi-annual evaluation. Also, this study looked into HRM practises and demonstrated the discrepancies between two industries. This research attempts to learn lessons from the PPA practicing organizations as well as recommending the best practises for PPA improvement in the CI. This research made an effort to fill the gaps in existing literature, particularly focusing on PPA and would help future research and practice.

8.3 Practical implications

The proposed PPA framework indicated that it has clarity and could be practically integrated into the HRM practices. Thus the proposed appraisal framework attempted to overcome drawbacks of the existing PPA, which would provide employees with a fair system and help the employee as well as the organization.

- It is expected that the proposed framework would increase the effectiveness of the performance appraisal system, which in turn increases the quality of the HRM practice in construction contracting organizations.
- The framework provides a guideline for performance evaluation and steps to measure the performance of an employee.
- This framework is simple to follow.
- It serves as a systematic procedure for documentation, generation of reports, providing feedback to employees, and helps in taking administrative decisions.

8.4 Limitations

The framework is developed based on an empirical study. The PDs are derived rationally. There may be additional PDs, which need deeper investigation and which are difficult to identify everything. The study is conducted in the Indian context only and reflects the employee's experiences. The major challenge was getting responses to the survey questionnaire from professionals and getting time for interviews from top management. As the study is related to HR, employees were hesitant to disclose

information. However, case studies, discussions, and triangulating the results helped to consolidate the broad findings.

8.5 Scope for future work

In addition to the points indicated in the limitations, some aspects need to be further explored in this area for the improvement of PPA. This study can be considered with larger sample size, more case studies, and explore each stage of PPA in construction organizations. PDs in the framework is proposed for three different levels in a broad way; therefore, it is suggested to refine the PDs with respect to the employee designations and weightage can be assigned to each PDs.

The proposed framework is recommended to be implemented in the construction organizations to better understand the difficulties or ease of implementation of PPA system in a real scenario. . Future work can be carried out based on the organization's response towards PPA framework.

The findings have presented a broad framework for Indian construction organizations mainly from contracting organizations perspectives. Though many aspects of performance appraisal systems are present in organizations around the world, some researchers have noted that contextual factors, cultural and national differences influence performance appraisal systems (Chiang and Birtch 2010). Considering these two aspects the findings of this study can be further extended to countries where the construction industry operates in similar work environments.

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ANNEXEURE-I QUESTIONNAIRE

SECTION 1: GENERAL INFORMATION

1) **Name:**
2) **Designation:**
3) **Experience :**
4) **Nature of your job :**
   a) Decision makers (Manager cadre)

   b) Coordinator (Asst manager, Engineer cadre)

   c) Technical cadre (Supervisors cadre)

5) **Roles and responsibilities:**

6) Number of employees in the organization(approximately):
   a) <200 b) 200-500 c) > 500
7) Annual turnover of the company(approximately in INR)
   a) 50 lakhs- 1Cr. b) 1 -10 Cr c) 10- 50 Cr d) >50 Cr

SECTION 2: NATURE OF PPA PROCESS

These questions are formed to know existing PPA process is being conducted and what an employee is receiving in an organization.

1) Does your organization have Personnel performance appraisal system?
   a) Yes b) No

2) Is Self -Appraisal is a part of PPA system in your Organization?
   a) Yes b) No

3) How performance standards (dimensions) are established?
   a) Group discussion b) Industry practices c) Job description

   d) Others (Please mention)_____

4) Performance standards (dimensions) are set by

a) Managers b) HR Managers c) Immediate supervisor

d) Committee including above all e) Other (Please mention)_____

5) Are Performance standards (dimensions) communicated to employees?

a) Yes b) No

6) How Performance standards are communicated to employees?

a) In meetings b) Correspondence c) Notice

d) Others (Please mention)_____

8) On what basis performance of an employee is measured?

a) Past performance b) Comparing with other employee

c) Organization goals and objectives d)Performance dimensions (indicators)

e) Other (Please mention) _____

9) How often your superiors discuss about your job performance?

a) Daily basis b) Weekly basis c) Monthly d) Yearly

10) What motivates employees to perform well in their Job?

a) Increments b) Recognition c) Promotion d) Any other (Please mention):_____

11) Is there any steps taken to improve your performance?

a) Yes b) No

12 If yes, what are the steps taken to improve Job performance?

a) Training b) Performance feedback c) Boosting Morale of the employee

d)Other (Please mention)_____

13) **Suggestions to improve PPA process (optional)**

14) **General Comments/Suggestions**

SECTION 3: <u>CHALLENGES IN PPA PROCESS</u>

Please indicate level of agreement for the following statements on a scale of 1 to 5 based on your experience

Scale	Level of agreement
1	Strongly disagree
2	Disagree
3	Neutral
4	Agree
5	Strongly agree

Sl.No	**Questions**	**Strongly disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly agree**
1	Performance standards have been communicated effectively to employees from the superiors					
2	Performance during the whole year reflected in the rating					
3	Your Past performance affects in your appraisal					
4	Appraiser rates an employee beyond his actual ability					
5	Appraiser rates an employee based on critical incident					
6	Appraiser has a tendency to give average rating to all employees					
7	Appraiser gives more rating if you are similar to him					
8	Your performance has been monitored regularly					
9	Your appraiser recognize and appreciate you for your contribution					
10	Based on performance feedback you will be able to improve your performance					

11	After appraisal ,Performance feedback has been given to you effectively					
12	Appraisers need training to evaluate your performance					
13	Having good or bad relationship with Superiors has affected your Performance appraisal					
14	Appraiser evaluates all the employees fairly					
15	Performance feedback is given at appropriate time					
16	You are satisfied with existing PPA process in your organization					
17	Employee's behavior changes towards superiors during appraisal time (to impress superiors)					
18	You feel like working more during Appraisal time					
19	You feel stressed out during Appraisal time (appraisal Pressure)					
20	Appraisee(employees) participates regularly in the appraisal process					

Comments/ Suggestions

QUESTIONNAIRE BASED ON PERFORMANCE DIMENSIONS

Please rate the importance of following parameters on a scale of 1 to 5 for your designation.

Scale	Importance level
1	**Not important**
2	**Less important**
3	**Neutral**
4	**Important**
5	**Very important**

Sl No	Performance dimensions	1	2	3	4	5
1	***Interactive-*** allows two side communication with, superiors subordinates, peers, clients, vendors, labours					
2	***Verbal communication*** - language usage with superiors subordinates and peers, clients, vendors, labours(Ability to transfer knowledge)					
3	***Non Verbal communication*** -Technical reports tender documents, specifications Daily report, weekly report, monthly report etc.					
4	***Questioning*** –to resolve any issues / to clarify the doubts					
5	***Listening*** – in terms problem solving/ before replying anything to employees or client one must listen carefully and react					
6	***Presentation skills***- presenting the work for superiors, clients, colleagues					
7	***Financial knowledge***- to approach vendors/customers/for bidding purpose , to prepare contracting document/cost estimation/ billing etc.					
8	***Present Market scenario***					
9	***Knowledge about domain***					
10	***Knowledge about Project resources***					
11	***Technical skills***- Design skills/Software knowledge/ Drawing interpretation etc.					

12	***Problem identification and resolving/Noticing errors***					
13	***Knowledge about OSHA building laws, safety rules and regulations etc.***					
14	***Knowledge about working standards***					
15	***Over time work***					
16	***Interest towards work***					
17	***Honest***					
18	***Loyal- to the organization***					
19	***Involvement at work***					
20	***Punctual-*** *finishes his work within given time*					
21	***Effort (*** individual effort***)***					
22	***Work distribution***					
23	***Adaptability***- willing to adapt for any kind of change					
24	***Handling the work***					
26	***Interdependency***-– let others do the work after them I will work attitude.					
26	***Reporting to superiors*** about work regularly/ whenever necessary					
27	***Systematic at work*** organizes the work					
28	***Staffing***- allocation of personnel for right work					
29	***Compatible*** - working together without any conflicts					
30	***Coordination*** among colleagues supervisor ,labour					
31	***Diplomatic*** – will not take any risk to put themselves in trouble/ being diplomatic towards employees or work					
32	***Supportive*** – Supports colleagues in any situation					
33	***Focusing on colleagues/ labour problems***					
34	***Conflicts resolving skill***					
35	***Influencing skill***					
36	***Timely responsiveness***- - responsive for the queries from the subordinates/superiors/colleagues					
37	***Observing ability***-Observes their subordinates and Peers for their skills to provide proper responsibility					
38	***Situational learning***/ Ability to learn -learns from the situation whether it may be good or worst situation/					
39	***Boldness /Courageous***– to take decision					

40	***Reasoning-*** Logical reasoning/ concludes any decision logically					
41	***Outcome oriented*** **-** without bothering about the work process, expects only result.					
42	***Initiative*** – takes work initiative/ Identifying the areas where improvement is required					
43	***Self-awareness*** –knows his own strengths weakness					
44	***Approachable-*** subordinates need not to hesitate approach their superiors					
45	***Providing Guidance*** **-** guides the subordinates with respect to work					
46	T***eam building capacity-*** Actively seeks and achieves group participation to improve work					
47	***Negotiating skill-*** with vendors, tender process etc.					
48	***Leave usage level***					
49	**Attendance in Meetings** - attendants every meeting					
	Any other dimensions which you feel important for performance ,please mention and rate it accordingly					

Comments/Suggestions

ANNEXURE II SEMI-STRUCTURED INTERVIEW QUESTIONNAIRE SKELETON

1) Brief information about your organization profile and yourself?
   - Designation
   - No of years' Experience
2) Have you gone through the PPA process?
3) How do you describe PPA process in your organization?
   - Does your organization follow Self-appraisal?
   - Do you know which method is being followed to evaluate the employees?
   - How often PPA is conducted in your organization
   - Related to PPA Process (Example : How goals and PDs are communicated)

4) For Appraiser

   g) On what basis employee's performance is measured in the organization?

   h) Have you faced any challenges/problems/issues while evaluating the employee? If Yes, what are they?

   i) What are measures taken to mitigate/ minimize the issues? (If any)

   j) What are the impacts?

For Appraisee

   a) On what basis your performance is measured?

   b) Have you faced any challenges/problems/issues during PPA b? If Yes, what are they?

   c) What are measures taken to minimize the errors? If any

5) What are the performance dimensions being used in the PPA system?
6) What are the PDs applicable to Decision maker, coordinator, executors for PPA?(depending on the interviewee)

ANNEXEURE III-SAMPLE OF QUESTIONNAIRE SURVEY

SECTION 1: GENERAL INFORMATION

1) **Name:**
2) **Designation:** Project Manager
3) **Experience :** 14 years
4) **Nature of your job :**

✓ a) Decision makers (Manager cadre)

b) Coordinator (Asst manager, Engineer cadre)

c) Technical cadre (Supervisors cadre)

5) **Roles and responsibilities:**
Handling of project.

6) Number of employees in the organization(approximately):
a) <200 ✓ b) 200-500 c) > 500
7) Annual turnover of the company(approximately in INR)
a) 50 lakhs- 1Cr. b) 1 -10 Cr c) 10- 50 Cr ✓ d) >50 Cr

SECTION 2: NATURE OF PPA PROCESS

These questions are formed to know existing PPA process is being conducted and what an employee is receiving in an organization.

1) Does your organization have Personnel performance appraisal system?
✓ a) Yes b) No

2) Is Self -Appraisal is a part of PPA system in your Organization?
✓ a) Yes b) No

3) How performance standards (dimensions) are established?
✓ a) Group discussion b) Industry practices c) Job description

d) Others(Please mention)_____

4) Performance standards (dimensions) are set by

a) Managers b) HR Managers c) Immediate supervisor

d) Committee including above all e) Others :_____(Please mention)

5) Are Performance standards (dimensions) communicated to employees?

a) Yes b) No

6) How Performance standards are communicated to employees?

a) In meetings b) Correspondence c) Notice

d) Others (Please mention)_____

8) On what basis performance of an employee is measured?

a) Past performance b) Comparing with other employee

c) Organization goals and objectives d)Performance dimensions (indicators)

e) Other (Please mention) _____

9)How often your superiors discuss about your job performance?

a) Daily basis b) Weekly basis c) Monthly d) Yearly

10) What motivates employees to perform well in their Job?

a) Increments b) Recognition c) Promotion d) Any other (Please mention):_____

11) Is there any steps taken to improve your performance?

a) Yes b) No

12 If yes, what are the steps taken to improve Job performance?

a) Training b) Performance feedback c) Boosting Morale of the employee

d)Other(Please mention)_____

13) Suggestions to improve PPA process (optional)

14) General Comments/Suggestions

SECTION 3: CHALLENGES INPPA PROCESS

Please indicate level of agreement for the following statements on a scale of 1 to 5 based on your experience

Scale	Level of agreement
1	Strongly disagree
2	Disagree
3	Neutral
4	Agree
5	Strongly agree

Sl.No	Questions	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1	Performance standards have been communicated effectively to employees from the superiors				✓	
2	Performance during the whole year reflected in the rating			✓		
3	Your Past performance affects in your appraisal					✓
4	Appraiser rates an employee beyond his actual ability			✓		
5	Appraiser rates an employee based on critical incident			✓		
6	Appraiser has a tendency to give average rating to all employees	✓				
7	Appraiser gives more rating if you are similar to him		✓		✓	
8	Your performance has been monitored regularly				✓	
9	Your appraiser recognize andappreciate you for your contribution				✓	
10	Based on performance feedback you will be able to improve your performance				✓	
11	After appraisal ,Performance feedback has been given to you effectively				✓	
12	Appraisers need training toevaluateyour performance			✓		
13	Having good or bad relationship with Superiors has affected your Performance appraisal			✓		
14	Appraiser evaluates all the employees fairly				✓	
15	Performance feedback is given at appropriate time				✓	

		SD	D	N	A	SA
16	You are satisfied with existing PPA process in your organization			✓		
17	Employee's behavior changes towards superiors during appraisal time (to impress superiors)			✓		
18	You feel like working more during Appraisal time			✓		
19	You feel stressed out during Appraisal time (appraisal Pressure)			✓		
20	Appraisee(employees) participates regularly in the appraisal process				✓	

Comments/ Suggestions

QUESTIONNAIRE BASED ON PERFORMANCEDIMENSIONS

Please rate the importance of following parameters on a scale of 1 to 5 for your designation.

Scale	Importance level
1	Not important
2	Less important
3	Neutral
4	Important
5	Very important

Sl No	Performance dimensions	1	2	3	4	5
1	*Interactive*- allows two side communication with, superiors subordinates, peers, clients, vendors, labours					✓
2	*Verbal communication*- language usage with superiors subordinates and peers, clients, vendors, labours(Ability to transfer knowledge)					✓
3	*Non Verbal communication* -Technical reports tender documents, specifications Daily report, weekly report, monthly report etc.		✓			
4	*Questioning* –to resolve any issues / to clarify the doubts				✓	
5	*Listening* – in terms problem solving/ before replying anything to employees or client one must listen carefully and react				✓	
6	*Presentation skills*- presenting the work for superiors, clients, colleagues				✓	
7	*Financial knowledge*- to approach vendors/customers/for bidding purpose , to prepare contracting document/cost estimation/ billing etc.				✓	
8	*Present Market scenario*				✓	
9	*Knowledge about domain*				✓	
10	*Knowledge about Project resources*					✓
11	*Technical skills*- Design skills/Software knowledge/ Drawing interpretation etc.					✓
12	*Problem identification and resolving/Noticing errors*					✓
13	*Knowledge about OSHA building laws, safety rules and regulations etc.*				✓	

		1	2	3	4	5
14	***Knowledge about working standards***				✓	
15	***Over time work***			✓		
16	***Interest towards work***				✓	
17	***Honest***					✓
18	***Loyal- to the organization***					✓
19	***Involvement at work***					✓
20	***Punctual-*** *finishes his work within given time*					✓
21	***Effort*** (individual effort)					✓
22	***Work distribution***					✓
23	***Adaptability***- willing to adapt for any kind of change					✓
24	***Handling the work***				✓	
26	***Interdependency***-– let others do the work after them i will work attitude.				✓	
26	***Reporting to superiors*** about work regularly/ whenever necessary					✓
27	***Systematic at work*** organizes the work					✓
28	***Staffing***- allocation of personnel for right work					✓
29	***Compatible***- working together without any conflicts					✓
30	***Coordination*** among colleagues supervisor ,labour					✓
31	***Diplomatic*** – will not take any risk to put themselves in trouble/ being diplomatic towards employees or work				✓	
32	***Supportive***– Supports colleagues in any situation				✓	
33	***Focusing on colleagues/ labour problems***				✓	
34	***Conflicts resolving skill***				✓	
35	***Influencing skill***				✓	
36	***Timely responsiveness***- - responsive for the queries from the subordinates/superiors/colleagues				✓	
37	***Observing ability***-Observes their subordinates and Peers for their skills to provide proper responsibility				✓	
38	***Situational learning***/ Ability to learn-learns from the situation whether it may be good or worst situation/				✓	
39	***Boldness /Courageous***– to take decision				✗	✓
40	***Reasoning***- Logical reasoning/ concludes any decision logically				✓	
41	***Outcome oriented*** - without bothering about the work process, expects only result.				✓	
42	***Initiative*** takes work ,initiative/ Identifying the areas where improvement is required				✓	
43	***Self-awareness***-knows his own strengths weakness				✓	
44	***Approachable***- subordinates need not to hesitate				✓	

	approach their superiors					
45	***Providing Guidance*** -guides the subordinates with respect to work				✓	
46	T***eam building capacity***-Actively seeks and achieves group participation to improve work				✓	
47	***Negotiating skill***-with vendors, tender process etc.				✓	
48	***Leave usage level***				✓	
49	**Attendance in Meetings**- attendants every meeting					✓
	Any other dimensions which you feel important for performance ,please mention and rate it accordingly					

Comments/Suggestions

SECTION 1: GENERAL INFORMATION

1) Name:
2) Designation: Depty Manager
3) Experience : 10.5
4) Nature of your job :
   a) Decision makers (Manager cadre) ✓
   b) Coordinator (Asst manager, Engineer cadre)
   c) Technical cadre (Supervisors cadre)
5) Roles and responsibilities:
   - Responsible for overall construction Project
   - Overall Managing of resources
   - Timely completion of Project
6) Number of employees in the organization(approximately):
   a) <200 b) 200-500 c) > 500
7) Annual turnover of the company(approximately in INR)
   a) 50 lakhs- 1Cr. b) 1 -10 Cr c) 10- 50 Cr d) >50 Cr

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a) Yes b) No

12 If yes, what are the steps taken to improve Job performance?

a) Training b) Performance feedback c) Boosting Morale of the employee

d)Other(Please mention)_____

13) Suggestions to improve PPA process (optional)

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2	Disagree
3	Neutral
4	Agree
5	Strongly agree

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2	Performance during the whole year reflected in the rating		✓			
3	Your Past performance affects in your appraisal			✓		
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5	Appraiser rates an employee based on critical incident			✓		
6	Appraiser has a tendency to give average rating to all employees		✓			
7	Appraiser gives more rating if you are similar to him				✓	
8	Your performance has been monitored regularly		✓			
9	Your appraiser recognize andappreciate you for your contribution			✓		
10	Based on performance feedback you will be able to improve your performance				✓	
11	After appraisal ,Performance feedback has been given to you effectively			✓		
12	Appraisers need training toevaluateyour performance			✓		
13	Having good or bad relationship with Superiors has affected your Performance appraisal					✓
14	Appraiser evaluates all the employees fairly					✓
15	Performance feedback is given at appropriate time			✓		

16	You are satisfied with existing PPA process in your organization			/		
17	Employee's behavior changes towards superiors during appraisal time (to impress superiors)				/	
18	You feel like working more during Appraisal time			/		
19	You feel stressed out during Appraisal time (appraisal Pressure)			/		
20	Appraisee(employees) participates regularly in the appraisal process		/			

Comments/ Suggestions

QUESTIONNAIRE BASED ON PERFORMANCEDIMENSIONS

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3	Neutral
4	Important
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2	***Verbal communication***- language usage with superiors subordinates and peers, clients, vendors, labours(Ability to transfer knowledge)		✓			
3	***Non Verbal communication*** -Technical reports tender documents, specifications Daily report, weekly report, monthly report etc.					✓
4	***Questioning*** –to resolve any issues / to clarify the doubts					✓
5	***Listening*** – in terms problem solving/ before replying anything to employees or client one must listen carefully and react					✓
6	***Presentation skills***- presenting the work for superiors, clients, colleagues					✓
7	***Financial knowledge***- to approach vendors/customers/for bidding purpose , to prepare contracting document/cost estimation/ billing etc.				✓	
8	***Present Market scenario***				✓	
9	***Knowledge about domain***					✓
10	***Knowledge about Project resources***					✓
11	***Technical skills***- Design skills/Software knowledge/ Drawing interpretation etc.					✓
12	***Problem identification and resolving/Noticing errors***					✓
13	***Knowledge about OSHA building laws, safety rules and regulations etc.***				✓	

14	***Knowledge about working standards***				✓	
15	***Over time work***					
16	***Interest towards work***					
17	***Honest***				✓	
18	***Loyal- to the organization***				✓	
19	***Involvement at work***					✓
20	***Punctual- finishes his work within given time***				✓	
21	***Effort (individual effort)***				✓	
22	***Work distribution***				✓	
23	***Adaptability***- willing to adapt for any kind of change				✓	
24	***Handling the work***					✓
26	***Interdependency***– let others do the work after them I will work attitude.			✓		
26	***Reporting to superiors*** about work regularly/ whenever necessary				✓	
27	***Systematic at work*** organizes the work				✓	
28	***Staffing***- allocation of personnel for right work					✓
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31	***Diplomatic*** will not take any risk to put themselves in trouble being diplomatic towards employees or work				✓	
32	***Supportive***– Supports colleagues in any situation				✓	
33	***Focusing on colleagues/ labour problems***				✓	
34	***Conflicts resolving skill***			✓		
35	***Influencing skill***				✓	
36	***Timely responsiveness***- - responsive for the queries from the subordinates/superiors/colleagues					✓
37	***Observing ability***-Observes their subordinates and Peers for their skills to provide proper responsibility				✓	
38	***Situational learning***/ Ability to learn-learns from the situation whether it may be good or worst situation/				✓	
39	***Boldness /Courageous***– to take decision				✓	
40	***Reasoning***- Logical reasoning/ concludes any decision logically			✓		
41	***Outcome oriented*** - without bothering about the work process, expects only result			✓		
42	***Initiative*** takes work initiative/ Identifying the areas where improvement is required					✓
43	***Self-awareness*** knows his own strengths weakness					✓
44	***Approachable***- subordinates need not to hesitate				✓	

	approach their superiors					
45	***Providing Guidance*** -guides the subordinates with respect to work				/	
46	***Team building capacity***-Actively seeks and achieves group participation to improve work				/	
47	***Negotiating skill***-with vendors, tender process etc.				/	
48	***Leave usage level***			/		
49	**Attendance in Meetings**- attendants every meeting				/	
	Any other dimensions which you feel important for performance ,please mention and rate it accordingly					

Comments/Suggestions

LIST OF PUBLICATIONS

Journals

1. Chaithra N. Kowshik, Gangadhar Mahesh. "Personnel Performance Appraisal Dimensions for Indian Construction Organizations". *International Journal of Recent Technology and Engineering,* November 2019.Volume-8 Issue-4.

2. Chaithra N. Kowshik, Gangadhar Mahesh. "Key Performance Indicators for Personnel Performance Appraisal System in Construction Industry". *Journal of Construction Engineering, Technology & Management.* 2016; 6(1): 39–44p.

3. Chaithra N. Kowshik, Gangadhar Mahesh " Personnel Performance Appraisal systems in Indian Construction Organizations-Case study approach" (under progress)

Conference

Kowshik, C. and Mahesh, G. (2018). "Personnel Performance Appraisal Practice in Small and Medium Construction Contracting Organizations in India". *International Conference on Construction, Real Estate, Infrastructure and Project Management (ICCRIP-2018),* 23rd -25th November, 2018. National Institute of Construction Management and Research (NICMAR), Pune.

BIO-DATA

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Educational Background

Degree	Year	Field of study / Department	University/Institute
M.Tech.	2013	Construction Technology and Management	VTU/Nitte Mahalinga Adyanthaya Institute of Technology (NMAMIT,Nitte)
B.E.	2011	Civil Engineering	VTU/ Vivekananda College of Engineering and Technology,Puttur

Professional Experience

- St. Joseph Engineering College, Vamanjoor, Mangaluru (July 2013-Jan 2015)

  Job Title: Assistant Professor