Impact Of Performance Appraisals On Performance Of Software Engineers In Sri Lanka

M.M.M.P. Mullegamgoda

(149061U)

Degree of Master of Business Administration

Department of Computer Science and Engineering

University of Moratuwa

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M.M.M.P. Mullegamgoda

(149061U)

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Department of Computer Science and Engineering
University of Moratuwa
Sri Lanka

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DECLARATION

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I have supervised and accepted this thesis/dissertation for the award of the degree.

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Dr. H.M.N. Dilum Bandara

(Research Supervisor)
2016-02-05

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ABSTRACT

Majority of the organizations follow performance appraisal process to evaluate employee performance, and results of performance appraisals are used for a number of purposes such as administrative uses, rewarding, and identifying training needs. While performance appraisal and management has a history form 1800s, it was adopted by the Information Technology (IT) industry only since 1990s. Most of the IT professionals perceive performance appraisal as an extra burden, and many questions about the appraisal process and results. IT professionals sometimes believe that performance appraisals have a negative impact on their motivation and work improvement. Therefore, it is imperative to study and understand the true impact of performance appraisals on employee work improvement in software development organizations.

This research attempts to identify the significance of performance appraisals on employee work improvement in software development organizations. This is identified via an online survey of software engineers working in IT organizations. The study analyzed goal setting, self-evaluation, appraisal interview, employee participation for the process, pay for performance, and personal development as independent variables and satisfaction towards the process as mediating variable. Dependent variable was employee performance. Based on these, the survey instrument with 48 questions was derived. Based on the collected survey responses it can be concluded that goal setting in the appraisal process, appraisal interviews, and personal development opportunities and pay for performance have moderate relationship with performance improvement. Self-evaluation facility in appraisal process and employee participation for the process have weak positive relationship with performance improvement. Satisfaction for appraisal interview and rewarding mechanism act as moderating mediators for performance. It was also identified that for employees who had more than five years of experience, relationship between performance appraisal and work improvement was not significant. These findings can be incorporated to enhance and develop better performance appraisal processes in IT organizations.

Keywords: Performance appraisal, Performance improvement, Performance management, Software engineers

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LIST OF ABBREVIATIONS

HR	Human Resource
HRM	Human Resource Management
ICT	Information Communication Technology
ICTA	Information and Communication Technology Agency of Sri Lanka
IEEE	Institute of Electrical and Electronics Engineers
IT	Information Technology
PA	Performance Appraisal

INTRODUCTION

Section 1.1 consists of an overview of performance appraisal, benefits of performance appraisal, and reasons for appraisal failures. Section 1.2 describes the importance of studying the impact of performance appraisal on employee work improvement in Information Technology (IT) organizations. Research problem and research questions are presented in Section 1.3 and 1.4, respectively. Outline of the thesis is presented in Section 1.5.

1.1 Background and Motivation

Performance appraisal is an important aspect in organizations because individual performance is the building block of organizational success and growth (Aguinis et al., 2013). A properly designed performance appraisal system is expected to provide valuable information to an employee about employees' performance and progress at work (Gupta and Kumar, 2012).

1.1.1 Performance Appraisal

Human Resource Management (HRM) defines performance management as an integrated approach to ensure that an employee's performance contributes to the organization's strategic aims. Performance appraisal is a subset of performance management, and includes setting work standards, accessing performance, and providing feedback to motivate, correct, and continue their performance. It is a systematic evaluation of an individual with respect to performance on the professional activities. Performance appraisal is a formal, structured system of measurements to evaluate job-related behaviors and outcomes. It is also as a method to discover reasons for performance and the way to perform effectively in future so that employee, organization, and society gain benefits (Human Resource Management, 2010).

In HRM following is considered as major benefits of performance appraisal:

- Linking organizational objectives with people behavior
- Develop people through feedback and trainings
- Share information upward, downward and sideways
- Salary increments and compensation
- Reinforce the employees

Among many reasons of performance appraisal failures followings can be considered as the prominent reasons:

- Lack of appraisal and feedback giving skills
- Management not taking appraisal seriously
- Appraiser and appraise are not prepared
- Employee not receiving ongoing feedback
- Appraiser not being honest or sincere
- Ineffective discussion on employee development
- Insufficient rewards for performance

According to established theories in HRM, measurements can be divided into qualitative analysis and quantitative analysis. Employee performance appraisal results or outputs are quantitative and competencies are qualitative. The overall performance appraisal process includes the following phases (Human Resource Management, 2010):

- Planning performance – Performance objectives are planned and agreed at the beginning of the period.
- Enabling/managing performance – Formally/informally tracking performance during the year and give feedback.
- Reviewing performance – The process of thoroughly appraising the individuals' performance at the end of the year. Identifying training needs, provide feedback and rewarding are the activities in this phase.

1.1.2 Motivation

Performance appraisals were initially designed for blue collar jobs and military soldiers in their trainings (Banker and Kemerer, 1989). With time is has evolved to a number of performance appraisal methodologies. According to Banker and Kemerer, 1989 performance appraisal was introduced to knowledge workers such as software engineers much more recently. It has been proven that identifying objective measures of performance in Information Technology (IT) are difficult (Banker and Kemerer, 1989).

Software industry has proven its uniqueness in nature, operation, contribution to GDP, and human resource practices (Sanyal and Biswas, 2014). IT companies depend on their talented and skilled workforce. As a result, measurement and management of performance of individual, team and the organization is an essential practice (Sanyal and Biswas, 2014). However, performance management for knowledge workers is difficult because IT professionals are more perceptual than factual as their jobs are more complex (Guhanathan, 2007).

Because IT organizations are dependent on skills and performance of its workforce, it is very important to measure employee performance for a given time period. Appraisal methods used in those companies are adopted from other industries such as manufacturing industry. So that it is important to study the impact of performance appraisal on employee work improvement in IT organizations, study whether those organizations achieve the ultimate benefit of performance appraisal, and the relevance and effectiveness of performance appraisal methods used in those organizations. There are number of researches done in performance appraisal area but a small number of them address performance appraisal with relevant to IT industry.

1.2 Research Problem

What is the significance of performance appraisal on employee work improvement in information technology organizations?

Knowledge workers have their unique characteristics. Therefore, Banker and Kemerer (1989) explained that identifying objective measures of performance in IT has proven difficult. IT organizations are using both subjective and objective measures to evaluate performance. Studying about the significance of performance appraisal on employee work improvement is the major research problem.

Performance appraisal was not initially developed for knowledge workers. IT field adopted this concept from manufacturing industry. Since this human resource practice is not developed for knowledge workers and there are very few researches covered performance appraisal with relevant to information technology workforce it is important to study whether performance appraisal has an impact on employee work improvement in information technology organizations. Present study covers main attributes of all phases in performance appraisal.

1.3 Research Question

Does the appraisal methods affect work improvement of software engineers?

Software engineers are a subset of knowledge workers. IT organizations are depending on the performance of its workers. This research focuses on software engineer (people who are dealing in software/web/mobile application development and management) category and their reaction towards appraisal output.

Software engineering can be defined as *"the systematic design and development of software products and the management of the software process. Software engineering has as one of its primary objectives the production of programs that meet specifications, and are demonstrably accurate, produced on time, and within budget."* (Mills, 1980).

According to IEEE, software engineering is a quantifiable approach to the development, operation, and maintenance of software. The study of these approaches is the application of engineering to software.

Since software engineers involve in major steps of software development life cycle, this job role is very important to IT organizations. The success of the project is highly depend on the performance of software engineers. So software engineer category is selected for this study.

1.4 Research Objectives

This research has two objectives:

1. Determine the effect of performance appraisal on employee performance improvement in IT organizations.
2. Contribute to existing research resource pool in the field of performance appraisal in IT organizations and the impact on knowledge worker performance.

In the present study employees' performance improvement acted as the dependent variable. Independent variables were identified through the literature review. The researcher has developed questionnaire to check the relationships between independent variables and dependent variables. Responses were used to perform quantitative analysis. Through statistical analysis researcher was able to determine impact of performance appraisal on employee work improvement.

As mentioned in Section 1.2 there is a limited number of researches cover the area of performance appraisal with relevant to IT industry. So the present study will be able to contribute to cover the field of performance appraisal with relevant to IT organizations up to some extent.

1.5 Outline

Critique of existing research work and how those can be used to build theoretical framework is presented in Chapter 2. Chapter 3 describes the adopted research methodology. Results of data analysis and interpretations is presented in Chapter 4. Concluding remarks and and recommendations for future studies are presented in Chapter 5.

2 LITERATURE SURVEY

The objective of this chapter is to evaluate related work related to better understand the research topic and analyze methodologies, key findings, and suggestions by previous researches. Section 2.1 presents the history of performance appraisal, 2.2 presents definition of job performance, and 2.3 presents attributes of performance appraisal. Criticisms of performance appraisal, measuring performance of IT professionals are presented in Section 2.4 and 2.5, respectively. Phases of performance appraisal are presented in Section 2.6, 2.7 and 2.8, respectively. Section 2.9 elaborates multiple uses of performance s appraisals, and Section 2.10 is performance appraisal methods and 2.11 presents the summary.

2.1 History of Performance Appraisal

Performance appraisals are used in majority of the organizations. It allows an organization to measure and evaluate an employee's behavior and achievements within a given period of time. Performance appraisals emerged in early 1800s (Wren, 1994). In cotton mills of Scotland silent performance monitors were used to monitor performance. Blocks of wood with different colors were placed above each employees' workstation. Those blocks acted as silent monitors. At the end of the day, the block was turned to a particular color based on worker performance (Wiese & Buckley, 1998).

Wies and Buckley (1998) describe the evaluation of performance appraisal in an organized manner. An army general in the United States (US) Army evaluated his juniors' performance in 1813. This incident was considered as the earliest formal performance evaluation in the US. In late 1800s The Federal Civil Service in the US gave merit ratings for its members. However, these performance appraisal results were not used for selection, retention, or promotion. At the end of nineteenth century and the beginning of twentieth century performance appraisals were used by government and military organizations. The supervisor provided an overall estimation of

performance without considering about the dimensions of the job role. The other tool was the man-to-man ranking procedure. The measurement was subjective and it measured how better an employee with compared to another.

The United States industry section used performance evaluation for salesman selection. Psychologists at Carnegie Mellon University used trait Psychology to develop man-to-man rating system. The army used this system during the World War I to rate soldiers. Business giants got to know about this appraisal method after the World War, and consequently the graphic rating scale was introduced by Donald Paterson in 1922 (Wiese and Buckley, 1998). After rating scale method, numerous new tools and techniques were introduced (Wiese and Buckley, 1998).

Initially performance appraisal was used only for administrative purposes. In this era management and trade unions did not take appraisal as serious. Wiese and Buckley (1998) explain that global rates and global essays were the first tools used in this era. In global rates, ratings were consisted with outstanding, satisfactory, and need improvement. In global essay evaluation method, performance related questions were asked. But these methods were not useful as expected because of their extreme subjectivity.

In 1950s organizations used performance appraisal in a wide range of performance appraisal methods. The most popular tool was the trait rating system. It did not closely related to employee development and was tied with reductions and removals. Because of these conflicts the necessity of new appraisal methods was raised (Wiese and Buckley, 1998).

The rater indicated a numerical scale based on personality trait and the performance dimensions were ill-defined. It did not consider the job performed and the skills necessary (Wiese and Buckley, 1998). It considered only the past actions not the future goals. Because of these problems the managers were looking for a better appraisal system in 1980's.

Legal considerations on performance appraisal were established in 1960s. 1970 Equal employment opportunity commission guidelines and Civil Rights Act of 1964 and

1966 pointed out the need for improvements in performance appraisal methods. The purpose of performance appraisal process became employee development and feedback. Employees were motivated to seek feedback. There was also evidence that performance feedback can lead to improvements in future performance (Wiese and Buckley, 1998).

Between 1950 and 1980, most research was addressed to improve the instruments and ratings of performance appraisal. Advantages and disadvantages of different types of rating scales and objective measures of performance were also analyzed during this time (Arvey and Murphy, 1998). Researchers focused toward developing a better and understandable methods to describe employee's behavior. Arvey and Murphy, 1998 cited Feldman, 1981, researches had concerned on introducing concepts from social science to the subject of performance appraisal.

Further work in 1990s addressed the impact of ongoing changes in the structure, culture, and function of organizations on performance appraisal. Structures of organizations are changing. They are becoming flatter, more decentralized, and are moving away from individual-based and toward team-based methods of production. (Cascio, 1995). Several studies focused on examining the impact of changes in organizations due to performance appraisals (Fletcher, 1995).

Dobbins (1994) noted that performance is determined by couple of factors, the behavior of the individual and the working environment. So the research suggested an integration of performance appraisal and both person and system components is effective in achieving the goal of appraisal process.

The evaluation of performance appraisal resulted with number of different performance appraisal methods. Performance appraisal methods are expected to serve multiple purposes simultaneously. It is important to clarify supervisor's goals, employee's goals and organizational goals (Dobbins, 1994).

In late 1990s performance appraisal serves multiple objectives. Because of the changing definitions of jobs and roles in the organization the appraisal criteria should

be changed. Researchers are focusing on reducing errors involving in the area of performance appraisal (Boswell and Boudreau, 1997).

Information Technology industry adopted performance appraisal in 1980s from manufacturing industry and adjusted it to fulfill requirements of that industry. Research with specific focus on performance appraisal and employee work improvement in IT organizations are limited (Wiese and Buckley, 1998).

2.2 Definition of Job Performance

"*Aggregated value to an organization of the set of behaviors that an employee contributes both directly and indirectly to organizational goals*." (Borman & Motowidlo, 1993; Campbell, 1990 Cited in Lifeng, 2007)

Harvard university has published a competence dictionary and it has aligned competencies with performance. Competencies are "the things" that an individual must demonstrate to be effective in a job, role, function, task, or duty. These activities include job-relevant behavior (what a person does that results in positive or negative performance), motivation (how a person feels about a job, organization, or geographic location), and technical knowledge or skills (what an employee knows or demonstrates regarding facts, technologies, a profession, procedures, a job, an organization, etc.). Required competencies are identified through the study of jobs and roles. Performance can be measured against competencies (Arvey and Murphy, 1998).

2.3 Attributes of Performance Appraisal Methods

Performance appraisal is one of the most complex and important Human Resource Management (HRM) activities. Employee participation for performance appraisal system is a very important component for fair and ethical evaluation of performance appraisal. Employees accept the appraisal results, if they perceive fair decision making process. Amount and quality of informal feedback, goal setting, performance

standards, self-appraisal process, and interview style are the factors which affects employee participation of the system (Roberts, 2003). An effective performance appraisal consists of a collaborative supervisor – employee development of performance standards, rating form, self-appraisal and employee participation in interviews. When employees play an important role in the appraisal process, employee satisfaction and acceptance for the process are enhanced (Roberts, 2003). Research demonstrates that higher level of employee participation affects employee and rater acceptance and it leads to system satisfaction, motivation and productivity.

Roberts (2003) explains, a valid and reliable performance appraisal system is built up with clear and specific standards of performance. The major concern is to develop standards to measure job duties and responsibilities. It is important to gather employee input in managing and performance scale creating. Self-appraisal provides an opportunity to an employee to systematically evaluate his/her performance. Self-appraisal increases the level of employee participation and readiness for the process enhance satisfaction, perceived fairness and reduce defensive behavior. Roberts, (2003) focused on the impact of appraisal interview participation and its outcome towards satisfaction about the appraisal process. A quality performance appraisal interview includes preservation of confidentiality and privacy of employees. Focus on employee training needs promotional opportunities and skill development is major attributes that employees expect from entire process. Goal setting is a well-established factor for motivation. It is a proven theory that goal setting is clearly associated with satisfaction and performance. Effective feedback on performance is important, It should be timely and specific to the role. It leads employees to adjust their work performance.

Unequal employee treatment, less confidentiality, rater issues in conducting appraisal interview, absence of systematic evaluation are factors which discourage employee participation in the appraisal process (Roberts, 2003).

Employee's attitude towards the appraisal and appraisal system were positive to the extent they believed that there was an opportunity to state their own side of the issues, the factors on which they were evaluated were job relevant, and objectives and plans

were discussed (Dipboye and De Pontbriand, 1981). Roberts (2003) focused more on employee participation for appraisal process, self-evaluation and satisfaction. Employees are positive towards appraisal to the extent that they feel that they have an opportunity to participate in process and appraisals are goal oriented (Dipboye and De Pontbriand, 1981). The questionnaire questions were based on features of the appraisal process. One item concerned employees' perceptions of the job relevance of the factors on which they were evaluated (Dipboye and De Pontbriand, 1981). The research concluded that perceived favorability of appraisal, perceived relevance of measures, and perceived discussion of goals and objectives are strongly related to opinions and satisfaction on appraisal system.

According to Prowse and Prowse, 2009 the purpose of appraisals needs to be clearly identified at the beginning of the process. Appraisal provides way to increase motivation, clarifying goals and achieve long term performance and career development. On the other hand the appraisal can be link with employee rewards. Growth of performance rewarding scheme is the factor that fill the gap between the effort and rewards increase performance levels. Relationship with rewarding has been proved in private and public sector employees. Performance appraisal provides an opportunity for the employee to clarify goals related to their job role, preform to achieve those goals and gain long term career developments (Prowse and Prowse, 2009). Major questions based on performance appraisal are what and how are observations on performance made, why and how are they discussed, what determines the performance on job. Appraisal can motivate employees by clarifying objectives and setting clear future objectives with relevant to training and development needs (Bach, 2005).

Employees who perceive distributive and informational justice during performance appraisal process are usually engage in their work and exhibit higher well-being. Employees who feel that they have been given fair ratings also believe that the procedures followed are fair and unbiased (Gupta and Kumar, 2012).

Bouskila-Yam and Kluger (2011) concludes that benefits of performance appraisals for organizations are questionable. The study was done for the strength-Based

Performance Appraisal process implementation at SodaStream. They have identified the problems in the existing process and designed a new process. The researchers have identified three goals of appraisal method; it should serve the organization towards improving its performance and business result. Second, it should focus on employee's strength. Third, it should reflect the employees contribution throughout the appraisal period (Bouskila-Yam and Kluger, 2011).

Guhanathan (2008) conducted a study on employee perception on performance appraisal in software development organizations in Sri Lanka. According to the research, Sri Lankan IT organizations use performance appraisal methods which contain three elements, employee participation in the process, participatory goal setting and feedback. These components are known as employee voice. Author concluded that for employee acceptance of performance appraisal, he/she should perceive that the process is fair and unbiased. Moreover, employee acceptance is a key factor for employee satisfaction on the appraisal method. Employee satisfaction of performance appraisal method leads to work improvement, motivation and productivity. Performance appraisal helps to retain and reward high performers and guide and improve low performers. It is very important in software development organizations because performance appraisal results and side effects have a direct impact on employee retention, satisfaction and long term sustainability and growth. The research highlights the importance of supervisors' role in maintaining accurate documentation of employee performance and involving employees in appraisal process. This research focused only three dimensions, employee participation in the process, participatory goal setting and feedback. Rewarding and personal development programs are major components in modern performance appraisal cycles. This research didn't consider rewarding factor. The research was conducted for 101 software professionals and it is not specific to a job role. Impact cane be differ from job role to job role.

Pichler (2012) created an instrumental model for employee reaction to performance appraisal. The model consider three aspect, namely pre appraisal, appraisal season, and appraisal outcome. Results of the analysis confirmed that appraiser-appraise relationship quality, performance appraisal participation affect to appraisal reactions

of the employee. The organizations should focus on employee relationships with managers in the process of performance evaluation.

Based on the related work, major attributes of performance appraisal methods can be summarized as below:

- Fair and unbiased
- Employee participation for the process
- Job relevance of factors the employee has been evaluated
- Purpose and goals are clearly defined
- Amount and quality of feedback
- Employee acceptance
- Self-evaluation

These attributes lead to significant results such as:

- Satisfaction on appraisal method
- Motivation
- Job satisfaction

2.4 Criticism on Performance Appraisal

Accessing past performance and rewarding for past performance were criticized by employees. Managers are discouraged to make negative judgments on employee performance because it can demotivate employee. To avoid this conflict supervisors are tend to use central tendency in making judgments. Managers over rate some competencies rather than critically evaluate all rated competencies (Prowse and Prowse, 2009). Organizational politics can also influence rates.

Some ratings may only include recent events. In this situation only recent events are considered in giving overall rating. It is called regency effect. Studies done in the United States and United Kingdom have pointed out that gender and ethnicity of appraiser and appraise act as subjective and bias (Prowse and Prowse, 2009). Test metaphor is based on assumptions on employee performance and rank appraisal ratings. There were problems on this rating method because assumptions are not always accurate. Employees can get invalid ratings as a result.

Prowse and Prowse, (2009) concluded that the most prominent criticism on performance appraisal is subjectivity. There are decisions on performance based on political metaphor. This argues that performance ratings are done badly because of lack of training on rating and feedback giving. Alternatively, appraise and appraisers believe that appraisal process is time wasting and useless activity.

Based on a survey of 278 organizations from 15 different countries, it was found that more than 90% of the organizations implement a formal performance management system (Cascio, 2006). Most studies indicate that firms are not managing employee performance properly, and only 30% of employees believe that their company's performance review system actually helped them improve their performance (Holland, 2006).

Performance appraisal was analyzed as goal-oriented behavior and concluded that if the goals impacted by raters. Rater behaviors are typically considered as rating errors impacted to responses of employee (Cleveland and Murphy, 1992).

An issue in modern organizations is evaluating the performance of employees who are working from home. Measuring performance of temporary workers is another issue because their duration of employment is relatively short (Wiese and Buckley, 1998).

Walker and Smither (1999) conducted a research on subjective ratings of 360 degree appraisal and found that there are still issues with subjective ratings, although the 360 degree appraisal covers entire work environment.

2.5 Solutions for Lack of Objectivity

Solutions for lack of objectivity of appraisal includes the introduction of multiple rater evaluation (Prowse and Prowse, 2009). It removes subjectivity and unfairness of performance appraisal and tackles the major issue in performance appraisal in a satisfactory way. IT also suggested removing gender bias appraisal ratings. Multiple ratings from peers and stakeholders eliminate subjectivity of appraisal. Rather than getting feedback only from the management it is more effective to get ratings from

project teams and stakeholders. This approach is more objective. Plenty of feedback and explanations are not effective like a summary of feedback.

The contribution on appraisal is strongly related to employee attitude, satisfaction, and strong relationships with employees (Fletcher and Williams, 1996). Discussions and feedback of employee past performance, personal development plans, training and development have huge impact on employee satisfaction and performance.

Employees and managers collaboratively set performance goals at the beginning of performance cycle. These goals include both results and behavior. Results refer outcomes that an employee achieved and behaviors are the way how outcomes are achieved. In mid-review the progress towards performance goals is measured, evaluate how personal development program is progressing. At the end of the year evaluate performance towards goals and provide feedback and identify areas for improvement (Prowse and Prowse, 2009).

2.6 Measuring Performance of IT Professionals

Identifying objective measurements of IT professionals is a difficult task. Prior work focused on two objective measures of operational performance of software engineers which are 1) Output quality and 2) Adherence to the schedule and effort estimate. Huckman et al. (2012) described output quality includes post-delivery defects and adherence is to check whether delivery of product on time and on budget. It is possible to get actual values for both schedule and effort. So researcher can check deviations of these two in measuring performance. If the product has delivered better than schedule that means the effort is also increased. Here the authors have used control variables as well. Among them, firm experience is found to be the most important. The learning curve and cumulative experience are associated with increase of performance. They have used complexity of the project, number of team members and project duration as control variables (Huckman et al., 2012).

2.7 Developing and Planning Performance

Planning is the initiate stage of the performance manages system process cycle and that is a continuous process that should be given a higher priority. Planning encourages employees and linking with each other which will lead to increase the commitment and understanding between the organization goals and the employee's. Planning usually identify the key drive of the stakeholders (Schneier et. al, 1987 cited in Ying, 2012). Organization goals explain about the tasks that should be accomplished by the individuals and the targets that should be met before the deadline, the performance of the departments and the organization over a time period while objectives explain about the overall performance the organization should meet (Armstrong and Baron, 2004 cited in Ying 2012).

Additionally it can be indicated that the productivity gains can correlate with the extent of prime management support and employee's participation within the method of setting objectives. It is a motivational method that additionally provides the individual the sensation of being concerned and creates a way of possession for workers, while a part of set planning section includes the agreement on a proper development plan for the staff. Actually this set up ought to be supported requisite skills, behaviors and information and key competencies which will be needed to realize the objectives and targets set. The event set up can even embody long-run development initiatives that area unit typically supported potential and good performance (Rogers and Hunter, 1991 cited in Ying, 2012).

In this planning stage, the supervisors and subordinates area unit concerned in an exceedingly joint participative method and set structure goals, additionally as specific goals for a personal. Alternatively, objectives conjointly produce the surroundings within which a personal are going to be measured per his or her own performance and output, with set standards for analysis (Nyembezi, 2009 cited in Ying, 2012).

2.8 Managing and Reviewing Performance

The second step of performance management system cycle is Managing performance. This stage separates the performance management as a process and performance appraisal as an activity. In this stage, it is essential to enhance the communication within the organization and every employee is responsible for managing their own work. Schneier et al. (1987, cited in Ying 2012) states that performance management may be a tool to confirm that managers manage effectively. Therefore, performance management system ought to make sure the manager of workers or groups grasp and perceive what is expected of them, and have the abilities and skill to deliver on these expectations and to develop the capability to fulfill this expectation area unit given feedback on their performance. Performance management system is additionally concerning making certain that managers themselves area unit tuned in to the impact of their own behavior on the people they manage, and area unit inspired to spot and exhibit positive behaviors. The actual performance can be compared to the required performance; therefore, the result is evaluated and a development arrange is ready supported the weakness. This comparative approach additionally provides a feedback mechanism to staff. Therefore, as to boost the feedback and update and discuss initial objectives, the organization should concentrate on communication at intervals workers and between workers and managers. It is necessary for managers to develop a totally integrated strategy that allows the various styles of communication to contribute to the success of the firm's mission or common goal. Continuous communication or exchanging info between an organization's strategic managers and its internal stakeholders should be designed to market commitment to the organization (Schneier, et. al, 1987 cited in Ying, 2012).

Employment training is a crucial tool in learning and development. Training is a method for developing human skills and information in order that employee's job performance improves. Employment is more and more being recognized as a major responsibility of managers (Bevan and Thompson, 1991 cited in Ying, 2012).

2.9 Rewarding Employee

Aguinis, Joo, and Gottfredson (2013) have recommended five ways to use monetary rewards effectively:

- Define and measure performance accurately
- Make rewards contingent on performance
- Reward employees in a timely manner
- Maintain justice in the reward system
- Use monetary and nonmonetary rewards

Monetary rewards affect employee motivation and performance. The reason why monetary rewards become powerful motivator for performance is that it helps to meet the basic needs of the employees and also higher level of needs. It does not improve employee's domain knowledge. It can motivate the employee to be committed on task and produce expected output. But certain nonmonetary rewards are designed for enrich job relevance skills and knowledge. Currently most organizations link their rewarding system with performance appraisal (Aguinis, Joo and Gottfredson, 2013). Authors also pointed out that reward and recognition systems can positively affect motivation, performance and interest on organization. Rewards increase performance and interest when:

- Made contingent on quality or performance or are given for meeting clear standards of performance.
- Made contingent on challenging activities
- Delivered for high effort and activity
- Given for mastering each component of a complex skill

Careful arrangement of rewards can enhance employees' interest and performance. This can happen when rewards are closely tied to the attainment of performance standards and to the personal accomplishment of challenging tasks. When rewards are linked to specific standards of performance, people become more contented and productive (Milne, 2007).

The early literature on appraisal linked appraisal with employee control and use of performance related rewards (Randell, 1994; Grint, 1993; Townley, 1993, 1999). Recent literature has substituted appraisal performance management and moved the focus on performance and performance pay and the limits of employee appraisal. The appraisal and performance pay link has three key issues; a) has performance related to appraisal grown in use, b) what type of performance do we reward and c) who judges management standards (Bach, 2005; Storey, 2007).

Performance pay creates linkage between individual effort and financial reward. It increases performance levels. This linkage between performance and financial reward increasing levels of performance has proved an increasing procedure in the public and private sector (Bevan and Thompson, 1992; Armstrong and Baron, 1998).

There are evidences from organizations where there is an impact of performance pay and effectiveness of improving performance. Marsden and Richardson, (1994) conducted a study relevant to performance goals followed by appraisal on how well employees reacted in motivation and maintaining productivity. As Randell (1994) had concluded, the potential objectivity and self-evaluation in appraisal reviews are factors that appraises refuse to express their weaknesses because it can affect their performance pay.

A wider approach to improve work design and motivation to develop and employee job satisfaction and are required for linking performance to improvement (Fletcher and Williams, 1996). Performance pay is determined by achieving rated appraisal objectives.

Gupta and Kumar (2012) concluded that leadership skills, customer focus, result oriented, problem solver, communication skills and team work are prominent managerial competencies. But these competencies are not investigated in managerial performance appraisal. These results suggest that managerial competencies need to be identified to produce a successful manager. Successful manager is a critical success factor for organizational growth.

2.10 Multiple Uses of Performance Appraisal

Performance appraisals are expected to serve a number of different purposes simultaneously (Wiese and Buckley, 1998). Aguinis et al., (2011) categorized uses of performance management for employees, managers and organizations. In employee perspective employees experience self-esteem, identify their strengths and weaknesses and sharpen strengths and minimize weaknesses, understand the behavior required for other positions. In management perspective, they get better insight about their subordinates, make employees more competent, get better understanding about good and poor performers and develop workforce with higher motivation. Organization is able to carry out administrative actions, enhance employee engagement, and increase employee commitment.

According to Aguinis et al. (2011) performance appraisal and management are owned by the participants of the process. The participants take maximum benefits form the process. Personal development plans include series of actions that the employees have to follow in order to improve performance.

Moulik and Mazumdar (2012) conducted a research for Indian IT sector based on six dimensions of appraisal uses. The dimensions were learning and development, motivation, decision making, administration/record keeping, role clarity and communication and organizational diagnostic uses. The authors concludes that the decision making and administrative uses have impacts on appraisal satisfaction. Clarity and communication and organizational diagnostics lead to identify organizational issues and individual concerns.

Islama and Rasad (2006) list following benefits of an effective appraisal system:

- Helps taking stocks of an employee's overall performance.
- Enables employee to pinpoint strength and spot weakness.
- Provides an opportunity to motivate employee and encourage for superior performance.

2.11 Performance Appraisal Methods

Performance appraisal methods can be divided into two broad categories as a) Past oriented methods and b) Future oriented methods. Figure 2.1 illustrates the classification of main performance appraisal methods. Each of the sub-classifications can be described as follows (Aswathappa, 2002; Hoque, 2015; Montather, 2014):

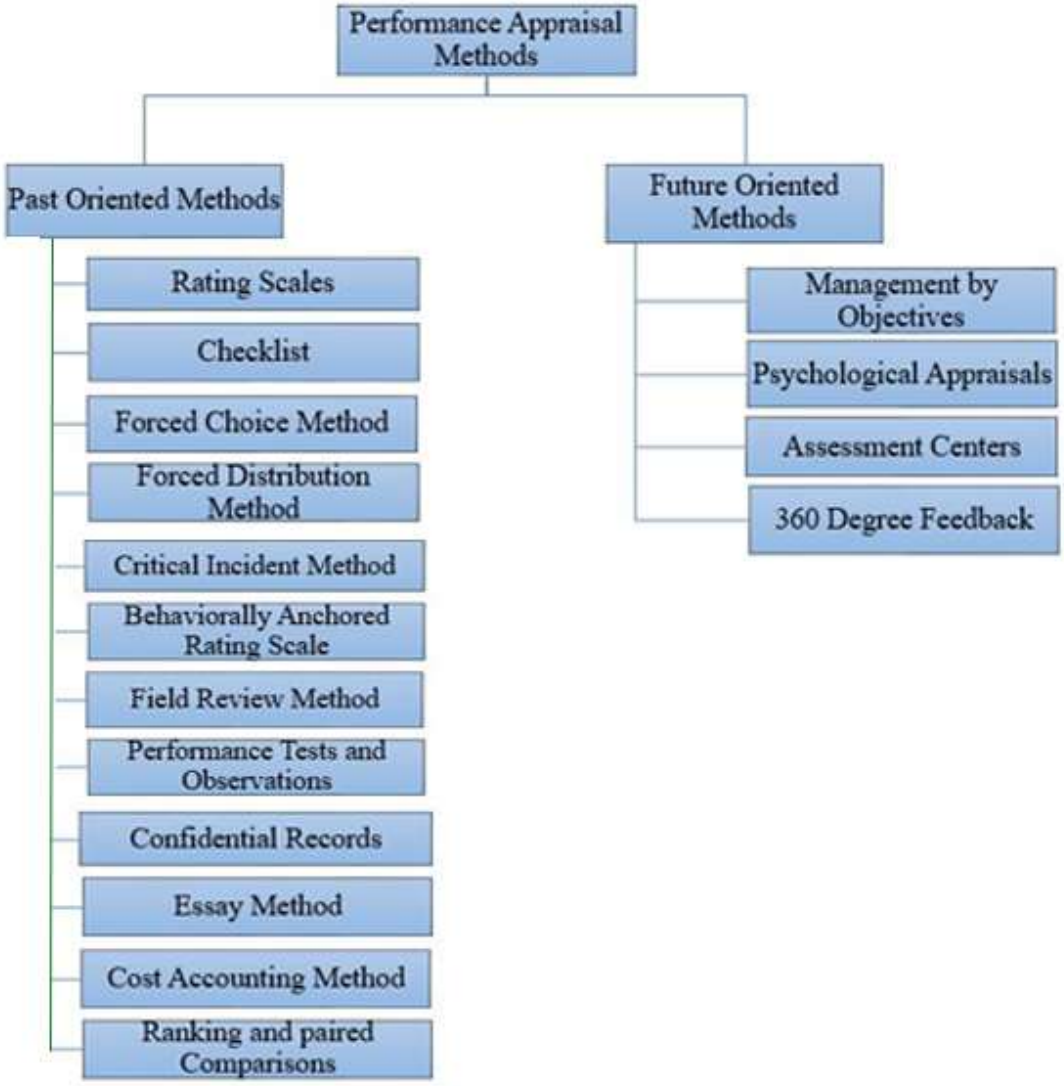

Figure 2.1 Classification of performance appraisal methods.

- Rating scales consist of numerical scales. It includes job related performance criterions. Rangers form excellent to poor. Every type of job can be evaluated through this and it is low cost, easy to design, but results are depending on the rater.

- Check lists consists yes or no type questions. Rater reports human resource department (HR) and HR does the evaluation. Advantages are easy to administrate and train, low cost. Here also result depends on rater and HR professionals.
- Forced choice method presents series of statements in blocks and rater indicates which statement is true and which one is false. Actual assessment is done by the HR division. Advantages are less level of bias because statements are predefined. Disadvantage is some questions may be wrongly formed.
- In forced distribution method performance is assumed to be in normal distribution. All the employees are clustered around high ranking and rater distribute them to all points of scale. Errors of central tendency can be occurred.
- Critical incident method focuses on critical behavior of an employee. Supervisors record such incidents. Forgetting incidents and negative incidents can be prioritized, feedback can become a punishment are the disadvantages. Advantages are evaluation is based on actual behavior, feedback is easy.
- Behaviorally Anchored Rating Scales presents statements of effective and ineffective behaviors. Rater has to rate which statements are effective and which statements are ineffective. This helps to overcome rating errors.
- Field review method is done by a rater from outside of the employee's own department. Usually the rater is from corporate human resource department. Disadvantage is outsiders cannot observe actual performance of the employee. Companies use this method for managerial level promotions.
- Performance testes and observations are based on job relevant knowledge and skills. Test can be written or present relevant skills. This measures potential performance not the actual performance.
- Confidential Records method is widely used in government organizations. Team work, attendance, self-expression, leadership, reasoning ability, technical ability and etc. are evaluated. This method is highly subjective.
- In essay method rater writes a description of employee's performance related activities. Existing capabilities, promotion capabilities, skills, weaknesses,

training needs, etc. are included in this description. Management can get overall understanding about the employee, but the effectiveness depends on the writing ability of the rater.

- In cost accounting model performance is evaluated against the monetary returns to the organization through a certain employee. This depends on cost and benefit analysis.
- In ranking paired comparison supervisor ranks each employee based on their performance and each employee is rated with compared to another.

"A 360-degree performance appraisal process is used as a tool that provides an evaluation about employees' performance. It is based on the opinion of different groups of reviewers who socialize with evaluated employees." (Espinilla et al., 2013). Providing feedback is a good thing for work improvements. But feedback may less effective if they are harmful. 360 degree systems provide data from many sources. Employee ratings are based on that. It is not a good thing to provide feedback with comparison with one another (DeNisi and Kluger, 2000).

2.12 Summary

This chapter consists of review of previous literature in the area of performance appraisal. Although there are number of researches done in the field of performance appraisal there is a few researches with relevant to IT industry. Planning performance, managing performance and rewarding are major steps in performance appraisal. Present study focus on all three steps. Most of previous researches focused on goal setting, evaluation and feedback. Table 2-1 summarize major attributes of performance appraisal and key outcomes of the process.

Table 2.1 Summary of literature review.

Attributes of Performance Appraisal	Significant Results of a Proper Performance Appraisal
• Fair and unbiased • Employee participation for the process • Job relevance of factors the employee has been evaluated • Purpose and goals are clearly defined • Amount and quality of feedback • Employee acceptance • Self-evaluation • Personal development activities • Pay for performance • Appraisal interview • Participation for the appraisal process	• Satisfaction on appraisal method • Motivation • job satisfaction

3 RESEARCH METHODOLOGY

The methodology used to identify the impact of performance appraisal on work improvement of software engineers is described in this chapter. Section 3.1 presents research framework. Section 3.2 presents operational definitions. Section 3.3, 3.4 and 3.6 present questionnaire instrument development, method of data collection and population and sampling, respectively. Section 3.6 presents the method adopted for the research and Section 3.7 presents the summary of the chapter.

3.1 Research Framework

Conceptual/research framework is an integration of researcher's logical assumptions and published research findings. This considers boundaries and constraints which dominate the situation, and capture the interrelationships between variables. Conceptual framework is the scientific, basic tool for research problem investigation (Sekaran, 2006). Figure 3.1 illustrates the research framework for this research. Each of the variables and their relationships are discussed next. Hypothesis were developed to check relationships between dependent and independent variables.

3.1.1 Variables

Employee work improvement is the dependent variable. It is the primary interest in this study. Table 3.1 summarizes the definition and previous research related to dependent variable. Employee performance improvement is expected to be measure by six independent variables. They are setting objectives, Self-evaluation, Appraisal interview, Employee participation, Personal development, Pay for performance. Table 3.2 presents details of independent variables. Employee's satisfaction for appraisal process is considered as the mediating viable and it is described in Table 3.3.

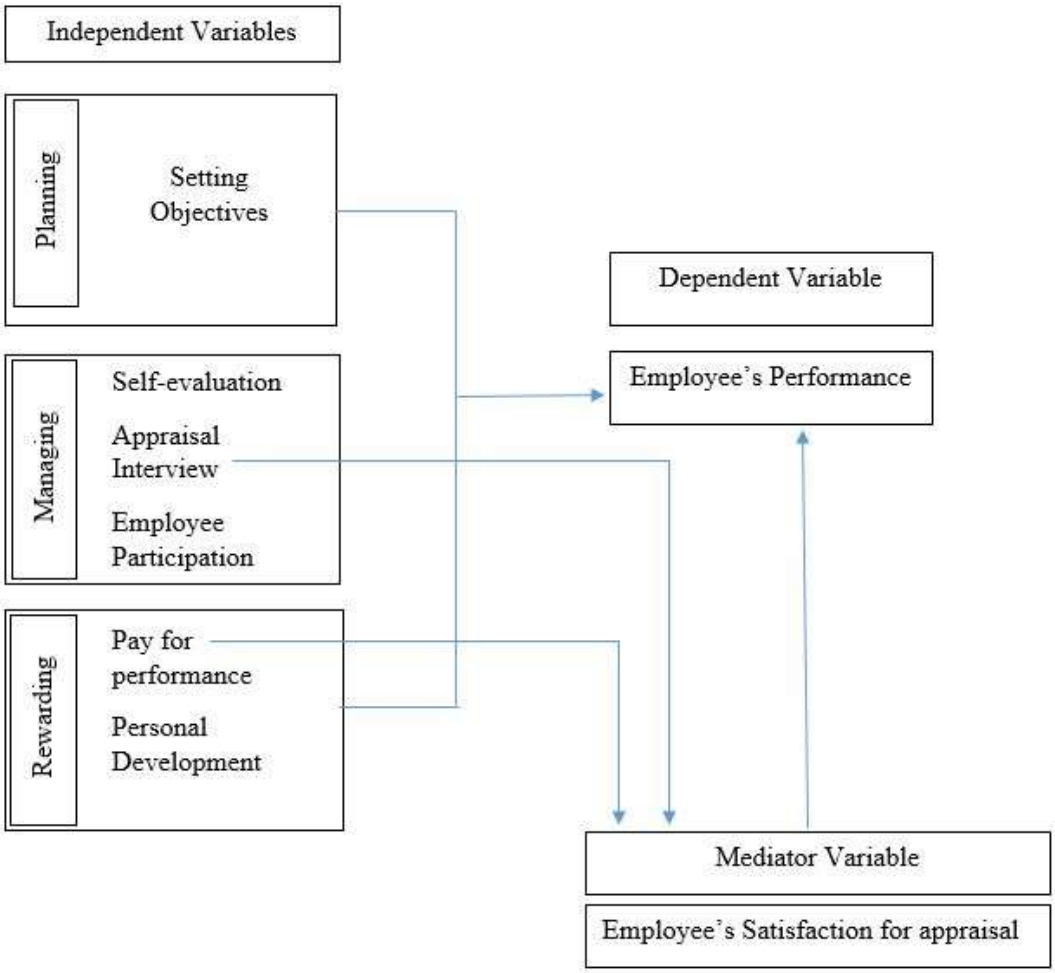

Figure 3.1 **Conceptual framework.**

Table 3.3-1 Dependent variable.

Variable	Definition	References
Employee Performance	"*Aggregated value to an organization of the set of behaviors that an employee contributes both directly and indirectly to organizational goals.*" (Borman & Motowidlo, 1993; Campbell, 1990 Cited in Lifeng, 2007)	Huckman et al., (2012); WERS, (2004); Bommer, W. H., (1995) Borman and Motowidlo, 1993; Campbell, 1990 Cited in Lifeng, 2007

Table 3.3-2 Independent variables.

Variable	Definition	References
Setting objectives	Develop standards and objectives to measure job duties and responsibilities. (Roberts, 2003)	Roberts, (2003); Giles & Mossholder,(1990); Prowse and Prowse, (2009); Islama and Rasad, (2006)
Self-evaluation	Self-appraisal provides an opportunity to the employee to systematically evaluate their performance. Self-appraisal increases employee participation and readiness for the process enhance satisfaction (Roberts, 2003).	Roberts, (2003); Campbell , and Lee, (1988); Islama & Rasad, (2006)
Appraisal interview	A quality performance appraisal interview includes preservation of confidentiality and privacy of employees. Focus on employee training needs promotional opportunities and skill development is major attributes that employees expect from entire process (Roberts, 2003).	Roberts, (2003); Pichler, (2012); Islama and Rasad, (2006)
Employee participation	How content employees are with the level of involvement they have in the performance appraisal process ,quality of feedback given to them and The linkage to reward allocations. (Cascio, 1996).	Roberts, (2003); Gupta and Kumar, (2012); Pichler, (2012); Gile and Mossholder,(1990); Islama and Rasad, (2006)
Personal development	Training and development programs conducted by the organization to improve employees' performance and knowledge.	Moulik and Mazumdar, (2012)
Pay for performance	Financial benefits that the employee gets based on his/her performance.	Giles, and Mossholder,(1990) Stajkovic and Luthans, (2001)

Table 3-3 Mediator variable.

Variable	Definition	References
Employee's Satisfaction for appraisal process	This variable focuses on the level of involvement that the employees have in the performance appraisal process. Focus on quality of feedback given to them and the linkage to reward allocations. (Cascio, 1996).	Roberts, (2003); Moulik and Mazumdar, (2012); Guhanathan, (2007); Cascio, (1996)

3.1.2 Hypothesis Development

Based on the variables identified in conceptual framework, hypothesis to be tested can be developed as follows. Let,

H_A: Alternate Hypothesis

H_0: Null Hypothesis

Hypothesis 01

$H1_A$: There is a positive relationship between effective goal setting in the appraisal system and employee performance.

$H1_0$: Effective goal setting in the appraisal system has no impact on employee performance.

Hypothesis 02

$H2_A$: There is a positive relationship between self-evaluation criteria in appraisal system and employee performance.

$H2_0$: A self-evaluation criterion in appraisal system has no impact on employee performance.

Hypothesis 03

$H3_A$: There is a positive relationship between employee participation for the appraisal process and employee performance.

$H3_0$: Employee participation for the appraisal process has no impact on employee performance.

Hypothesis 04

$H4_A$: There is a positive correlation between appraisal interview and employee performance.

$H4_0$: appraisal interview has no impact on employee performance.

Hypothesis 05

$H5_A$: There is a positive relationship between pay for performance and employee performance.

$H5_0$: Pay for performance has no impact on employee performance.

Hypothesis 06

$H6_A$: There is a positive correlation between personal development process and employee performance.

$H6_0$: Personal development process has no impact on employee performance.

Hypothesis 07

$H7_A$: Employee performance is mediated by employee satisfaction towards appraisal interview and pay for performance.

$H7_0$: Employee performance is not mediated by employee satisfaction towards appraisal interview and pay for performance.

3.2 Operational Definitions

Analyze previous research studies and define concepts in theoretical framework is the next step. The purpose of this is to understand concepts and identify measurements. Then these aspects have to be translated into observable and measurable elements to develop an index of measurement of the concept (Sekaran, 2006).

3.2.1 Setting Objectives

This is an independent variable. Theoretically performance appraisal is a sub-component of performance management. The stages in performance management process have impact on the success of performance appraisal process. This variable includes belongs to the planning phase. Dimensions for this variable are communication of goals and objectives, clarity of goals, availability of goals and objectives. Research study uses these three items to capture this variable on a five-

point Likert scale ranging from "Strongly Agree" as a "1" to "Strongly Disagree" as a "5". For example, questionnaire questions were in the form of: Goals are communicated across the team at the beginning of the appraisal cycle.

According to literature effective goal setting in the appraisal system consists of performance goals that are specific, moderately difficult and accepted. The purpose of appraisals needs to be clearly identified. Appraisal provides way to increase motivation, clarifying goals and achieve long-term performance and career development (Roberts, 2003).

"Goal setting has been powerful motivational tool. Majority of goal setting research has been carried out in non-appraisal settings. Goal setting consists of performance goals that are specific, moderately challenging and accepted. Goal setting process in the performance appraisal has been associated with greater appraisal satisfaction and increased performance" (Islama and Rasad, (2006) cited Dobbins et al., 1990).

3.2.2 Self-Evaluation

This is an independent variable which belongs to the managing phase. Dimensions included in the study are availability of self-evaluation criteria in appraisal system, job relevance of factors, and supervisor participation in self-evaluation review. We use three items to capture this variable on a five-point Likert scale ranging from "Strongly Agree" as a "1" to "Strongly Disagree" as a "5". For example, questionnaire questions were in the form of: Factors on which you were evaluated are job relevant.

Self-evaluation increases participation and readiness for the appraisal interview (Campbell and Lee, 1988). Self-evaluation allows to systematically assessing their performance. It is a method to resolve employees' general complaint "*Our appraisal process does not take any assessment of me into account*." Previous researches have concluded that self-evaluation leads to increase employees' perceived fairness on the performance appraisal process (McCarthy, 2000 cited in Islama and Rasad, 2006).

3.2.3 Appraisal Interview

This is an independent variable and also included in the managing phase. Dimensions include interviewer's experience, level of confidentiality, supervisor's support, time management for the interview, level of opportunity to express employee side issues. Research study uses seven items to capture this variable on a five-point Likert scale ranging from "Strongly Agree" as a "1" to "Strongly Disagree" as a "5". For example, questionnaire questions were in the form of: Supervisor preserved the confidentiality of my appraisal results and feedback. Quality appraisal interview includes sensitivity to employee's need for privacy and confidentiality (Pichler, 2012).

3.2.4 Employee Participation

This is an independent variable, which belongs to the managing phase. Dimensions used for this variable are role of the employee in appraisal process, knowledge about the purpose of appraisal. We use three items to capture this variable on a five-point Likert scale ranging from "Strongly Agree" as a "1" to "Strongly Disagree" as a "5". For example, questionnaire questions were in the form of: I have a proper understanding about the appraisal method which is been practiced in my organization.

When the employees play a major role in appraisal process, employees' satisfaction and acceptance for the process is enhanced (Roberts, 2003). If the employees perceive the appraisal system as biased and unfair that they will hesitate to accept appraisal results and interview comments. Employee voice is presented through appraisal process participation. Employee can participate in developing evaluation criteria. (Islama and Rasad, (2006) cited (Jordan, 1992).

3.2.5 Personal Development

This is an independent variable. It belong to the rewarding phase. Rewards are financial and non-financial. Availability of career development activities based on appraisal results is measured in this phase. Dimensions are level of training and coaching, individual discussions, availability of knowledgebase and peer support. In our study we use six items to capture this variable on a five-point Likert scale ranging

from "Strongly Agree" as a "1" to "Strongly Disagree" as a "5". For example, questionnaire questions were in the form of: Organization provides professional training programs to develop employees.

3.2.6 Pay for Performance

This is an independent variable. Availability of rewarding method in appraisal system and fairness of rewarding system are dimensions for the present study. We use three items to capture this variable on a five-point Likert scale ranging from "Strongly Agree" as a "1" to "Strongly Disagree" as a "5". For example, questionnaire questions were in the form of: Employees got fair rewards based on their appraisal results.

3.2.7 Employee Satisfaction for Appraisal Process

This is the mediating variable which focuses on the level of involvement that the employees have in the performance appraisal process. Focus on quality of feedback given to them and the linkage to reward allocations. (Cascio, 1996). Dimensions are level of satisfaction on appraisal interview and rewards. Six items to capture this variable on a five-point Likert scale ranging from "Strongly Agree" as a "1" to "Strongly Disagree" as a "5" are used in the research study. For example, questionnaire questions were in the form of: I am satisfied about the way that supervisor has conducted the interview.

3.2.8 Employee Performance

This is the dependent variable, which can be defined as the job related activities expected of a worker and how well those activities were executed. Many business personnel directors assess the employee performance of each staff member on an annual or quarterly basis in order to help them identify suggested areas for improvement" (Business Dictionary, 2015).

Identifying performance measures for information technology industry is difficult (Huckman et.al, 2012 cited Banker and Kemerer 1989). Research done by Huckman et.al, (2012) used two measurements to determine IT worker's performance.

The number of defects in acceptance testing is a common measure of quality. User acceptance testing is done at the last stage in software developing. The code is executed against projected requirements and identifies deviations (Boehm, 1981 and Jones, 1986 Cited in Huckman et al., 2012).
Software projects has a plan for completion. Each stage has a dead line. If there is a deviation to planned deadlines that means the required effort is not applied. So adherence to schedule is an observable factor. (Huckman et al., 2012).

Present study uses ten items in two dimensions to capture this variable on a five-point Likert scale ranging from "Strongly Agree" as a "1" to "Strongly Disagree" as a "5". For example, questionnaire questions were in the form of: Employees are focusing on quality of the output because they want to improve their performance level. Table 3-7 presents variables and questionnaire item mapping.

3.3 Questionnaire Instrument Development

Table 3.4 presents the mapping between independent variables and questionnaire items. Table 3.5 presents dependent variables and questionnaire item count while Table 3.6 refers mediator variable and questionnaire item count. Independent variables and questionnaire item mapping is listed in Table 3.7. Table 3.8 refers to dependent variable and questionnaire item mapping and Table 3.9 shows the mediator variable and questionnaire item mapping. Table 3.10 show the demographic questions mapping.

Table 3.4 Independent variables and questionnaire item count.

Variable	Number of Items	Scale
Setting objectives	3	Five point Likert Scale
Self-evaluation	4	Five point Likert Scale
Appraisal interview		Five point Likert Scale
Employee participation	3	Five point Likert Scale
Personal development	6	Five point Likert Scale
Pay for performance	3	Five point Likert Scale

Table 3.5 Dependent variables and questionnaire item count.

Variable	Measurement	No of Items	Scale
Employee's performance	Adherence to schedule	5	Five point Likert Scale
	Output quality (post-delivery defects)	5	Five point Likert Scale

Table 3.6 Mediator variable and questionnaire item count.

Variable	No of Items	Scale
Employee's satisfaction for appraisal process	6	Five point Likert Scale

Table 3.7 Mapping between independent variables and questionnaire items.

Variable	Dimension	Scale	Questionnaire Item
Setting Objectives	Availability of goal setting process	Five point Likert Scale	S3 – Q1
	Communication of goals and objectives	Five point Likert Scale	S3 – Q2
	Clarity of goals	Five point Likert Scale	S3 – Q3
Self-evaluation	Availability of self-evaluation criteria in appraisal system	Five point Likert Scale	S4 – Q4
	Job relevance of factors	Five point Likert Scale	S4 – Q5 S4 – Q7
	Supervisor participation in self-evaluation review.	Five point Likert Scale	S4 – Q6

Variable	Dimension	Scale	Questionnaire Item
Appraisal interview	Interviewer's experience	Five point Likert Scale	S5 – Q11
	Level of confidentiality	Five point Likert Scale	S5 – Q12
	Supervisor's support	Five point Likert Scale	S5 – Q13
	Time management for the interview	Five point Likert Scale	S5 – Q14
	level of opportunity to express employee side issues	Five point Likert Scale	S5 – Q15
	Objectivity	Five point Likert Scale	S5 – Q16, Q17
Employee participation	Role of the employee in appraisal process	Five point Likert Scale	S4 – Q9, Q10
	knowledge about the purpose of appraisal	Five point Likert Scale	S4 – Q8
Pay for performance	Availability of financial method	Five point Likert Scale	S6 – Q18, Q19, Q20
Personal Development	Level of training and coaching	Five point Likert Scale	S7 – Q21, Q22
	Individual discussions	Five point Likert Scale	S7 – Q23
	Peer support	Five point Likert Scale	S7 – Q24, Q27
	Availability of knowledgebase	Five point Likert Scale	S7 – Q25

Table 3.8 Mapping between dependent variables and questionnaire items.

Variable	Dimension	Scale	Questionnaire Item
Employee's performance	Adherence to schedule	Five point Likert Scale	S9 – Q33, Q34, Q35, Q36, Q37
	Output quality (post-delivery defects)	Five point Likert Scale	S10 – Q38, Q39, Q40, Q41, Q42

Table 3.9 Mapping between mediator variables and questionnaire items.

Variable	Scale	Questionnaire Item
Employee's satisfaction for appraisal process	Five point Likert Scale	S8 – Q27, Q28, Q29, Q30, Q31, Q32

Table 3.10 Mapping between demographic questions and questionnaire items.

Variable	Scale	Questionnaire Item
Age	Ratio	S2 – Q1
Number of appraisal cycles	Ratio	S2 – Q2
Gender	Normal	S2 – Q3
Industry experience	Ratio	S2 – Q4
Type of the organization	Normal	S2 – Q5

3.4 Method of Data Collection

The target population for the study is software engineers working in IT organizations. Because the population is large and aim is to analyze the impact of performance appraisal on employee work improvement, most appropriate approach is quantitative methods. Previous work in this area are also quantitative. Moulik and Mazumdar, (2012) and Huckman (2012) are the most recent research in this area and those researches confirm that most suitable method is quantitative. Present study is conducted for selected sample of software engineers.

Questionnaires are the most suitable method for data collection. Face to face interviews are not a suitable method to study the impact of performance appraisal on employee work improvement in IT organizations because performance appraisal results are confidential and employees might not give an honest answer. Previous work in this area were also used questionnaires and responds were anonymous. Informal discussions were conducted to identify suitable variables and to get an idea about widely used performance appraisal methods in Sri Lankan IT organizations. Type of questions are structured and based on five point Likert scale. Previous researches also used structured questionnaires based on Likert scale. Responds were easy to map and

analyze because all questions are is same scale. Questionnaire was developed using an online form.

3.5 Population and Sampling

As mentioned in Section 3.4 the target population for the study was software engineers working in large, medium, and small scale IT organizations in Sri Lanka. This survey is related to performance appraisals, so employees who have faced at least one appraisal cycle were considered.

3.5.1 Population for Study

According to Information Communication Technology Agency of Sri Lanka (ICTA), National ICT workforce survey 2013 November, the projection for number of ICT employees in 2014 is 82,854. National ICT workforce survey 2013 is the most recent trusted source in Sri Lanka to get the figure for information technology population. Overall ICT workforce is 82,854 and 21% of them are in software engineer/programmer category. Therefore, approximate number of software engineers is 17,000.

3.5.2 Sampling technique and sample size

To achieve a 95% confidence level and 5% of margin error for a population of 17,000 with random sampling, 376 samples are required. This is determined based on Raosoft sample size calculator (Raosoft.com, 2015). Raosoft automatically generate sample size when population, margin error and confidence level were given as inputs.

3.6 Method Adopted

The questionnaire was distributed among the software professionals working in IT organizations in Sri Lanka. Before distributing the questionnaire to a large number, a pilot study was carried out by collecting data from selected ten software engineers to

find out internal consistency of the questionnaire and ensure the understandability of the questionnaire. The outcome of pilot study is presented in Section 4.1.1. Questionnaire was made available online for the target sample. Questionnaire was developed using Google forms. Data analysis and was performed out using IBM SPSS version 20 software.

3.7 Summary

Goal setting, self-evaluation, participation for appraisal process, appraisal interview, pay for performance, personal development opportunities are selected as independent variables. Satisfaction towards appraisal interview and rewarding process is expected to act as mediator variable and performance improvement is the dependent variable. Definitions of selected variables and measurements were also discussed. This research study focus on the 17,000 software engineers in Sri Lankan IT industry. For this population, selected sample size is 376. Online questionnaire is used to collect the responses. Questionnaire consisted of forty eight questions with six demographic questions. A pilot study was conducted for ten software engineers to check the reliability of questions.

4 DATA ANALYSIS AND FINDINGS

This chapter presents results of the data analysis based on the statistical analysis of survey responses. The data were collected, processed and analyzed to determine the validity of hypothesis presented in Section 3.1.2 in the context of impact of performance appraisal on employees' work improvement. Section 4.1 presents reliability test while the descriptive analysis is presented in Section 4.2. Section 4.3 presents inter-item correlation analysis. Pearson's correlation analysis is conducted in Section 4.4 and corresponding findings are presented in Section 4.5. Summary of the chapter is presented in Section 4.6.

4.1 Reliability Test

Before conducting the survey for a large sample it is important to check the reliability of the questionnaire instrument. Main objective of this step was to check the understandability of questions and internal consistency for the variables. In reliability study it is suggested to check whether the questions asked under each area supported each other. Cronbach's Alpha Coefficient (Sekaran, 2006) is used to test the reliability as it can be used for multi-point scaled items used in the survey.

A preliminary survey was conducted for ten respondents and then Cronbach's Alpha Coefficient was calculated. Based on feedback of respondents some questions were fine-tuned, a couple of questions were eliminated and a couple of new questions were added. 39 questionnaire items were used in this pre-survey reflecting one dependent variable and six independent variables.

IBM SPSS version 20 was used for Cronbach's Alpha Coefficient calculation. A value above 0.7 for Cronbach's Alpha Coefficient is acceptable. But if the value is above 0.6 it is also considered as acceptable. Table 4.1 and Table 4.2 display Cronbach's Alpha Coefficient values for each variable.

Table 4.1 Reliability test for independent variables.

Variable	No of Items Used to Measure	No of Items Eliminated	Cronbach's Alpha Coefficient
Setting objectives	3	0	0.867
Self-evaluation	3	0	0.834
Appraisal interview	4	0	0.807
Employee participation	4	0	0.836
Personal development	3	0	0.822
Pay for performance	3	1	0.620

When all three items were used in the variable "pay for performance" Cronbach's Alpha Coefficient was 0.285. When the question "I have got only financial rewards for my performance" was eliminated, the new coefficient was 0.620. Therefore, the question was reworded as "I have got financial rewards for my performance."

The questionnaire was distributed to known people and got feedback about the understandability of questions. Based on this feedback some questions were fine-tuned and given examples for some situations to enhance the understandability. For example, "I have got an opportunity to express my side issues which affect to performance (e.g., lack of team collaboration)". The researcher got feedback from more experienced researchers and did necessary adjustments to questions. Cronbach's Alpha Coefficient calculation for dependent variable is shown in Table 4.2.

Table 4.2 Reliability test for dependent variable.

Variable	Dimension	No of Items used to measure	No of items eliminated	Cronbach's Alpha Coefficient value
Employee's Performance	Adherence to time schedule	5	5	0.827
	Post-delivery defects	5	5	0.709
Overall Variable		10	10	0.885

4.2 Descriptive Analysis

The population of interest include software engineers working in software developing organizations and organizations which are having small development teams. The other requirement in selecting companies was that the companies need to practice a performance appraisal process. The survey was conducted electronically using an online questionnaire.

Figure 4.1 shows the number of responses over time. Facebook, LinkedIn, email, and phone call campaigns were conducted to reach the sample. While the calculated sample size was 376, the researcher was able to collect only 255 responses due to low response. From those 255 samples, only 223 responses were considered as valid. Questionnaire was sent to approximately 800 software professionals. However, only 255 were returned. Hence, the effective response rate is 27.9%.

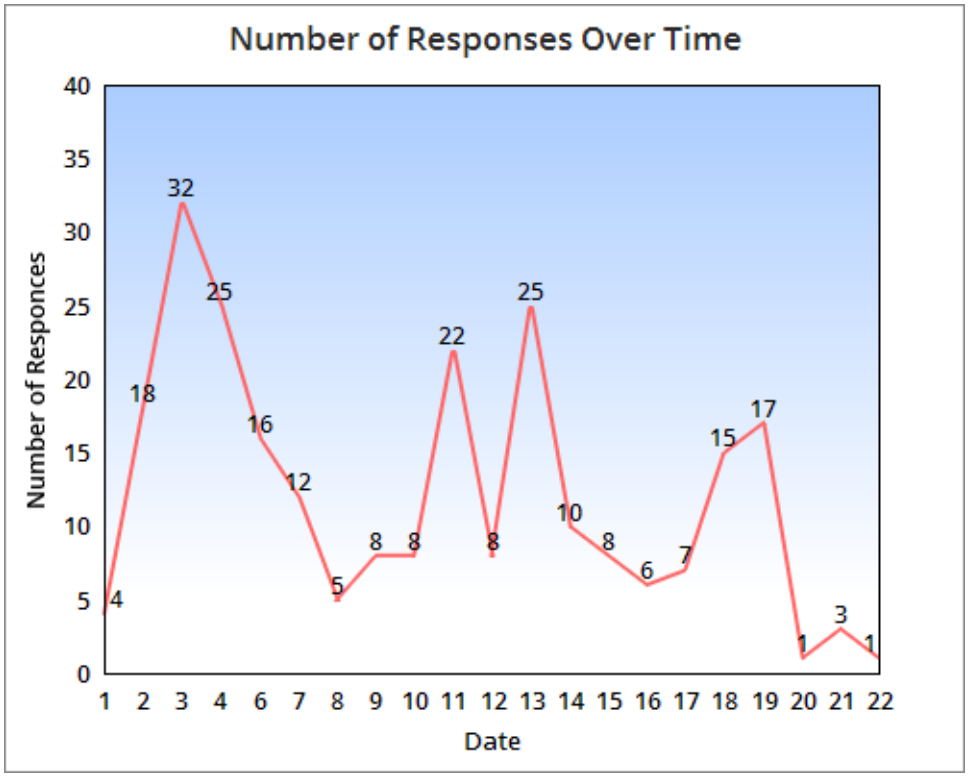

Figure 4.2 Variation of the number of responses over time.

Breakdown of job role of survey participants is shown in Figure 4.2. It can be seen that 80% of responders belong to the software engineer and senior software engineer category. 8% were quality assurance engineers and 3% were tech leads. Rest includes project managers, system administrators, web developers, associate software engineers, business application consultants, business analysts, and technical writers. Because the research focus was on software/web/mobile application developers, responses from quality assurance engineers, system administrators, business analysts technical writers, and IT officers were eliminated. After this valid 223 survey responses were considered for further processing.

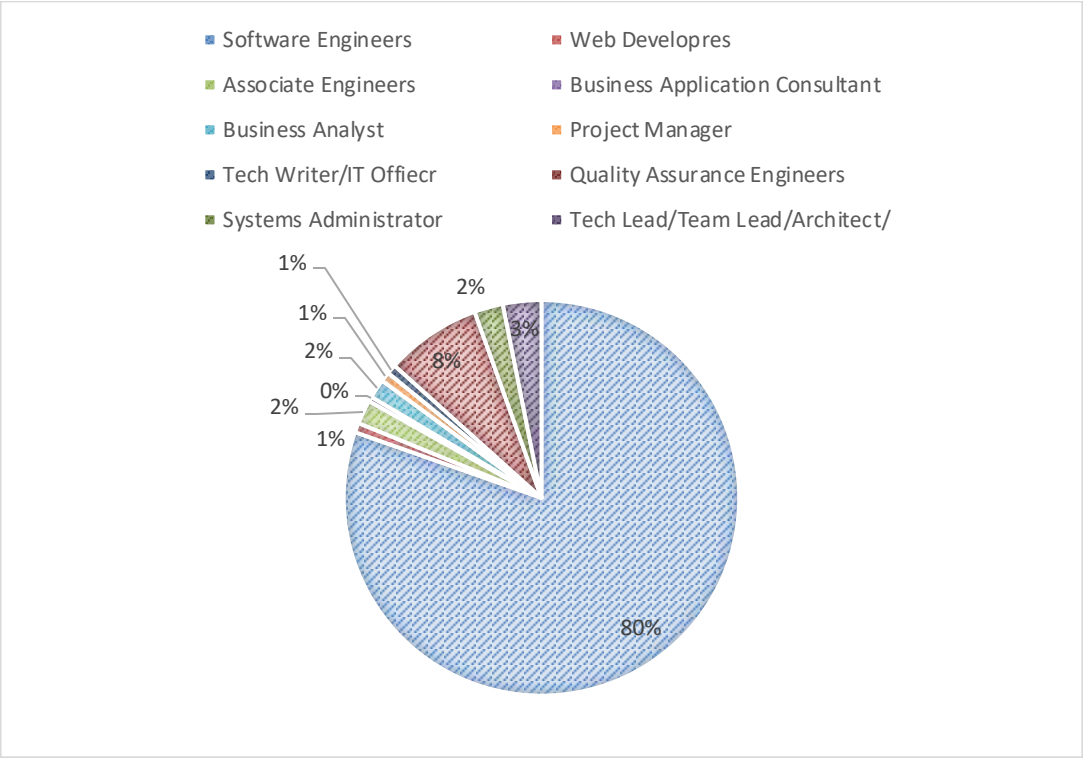

Figure 4.2.1 Job role of participants.

Gender distribution is presented in Figure 4.3 where 65% were male participants where remaining 35% were females. Age distribution is illustrated in Figure 4.4. 83% of responders were in the 21-30 year category. 17% of responders were from 31-40 category and 0.4% were from 41-50 category. Level of professional experience is presented by Figure 4.4. As see in Figure 4.5 11% of the participants were with less than two years of experience, 17% had two years of experience, 47% had three to five years of experience, and 25% had more than 5 years of experience.

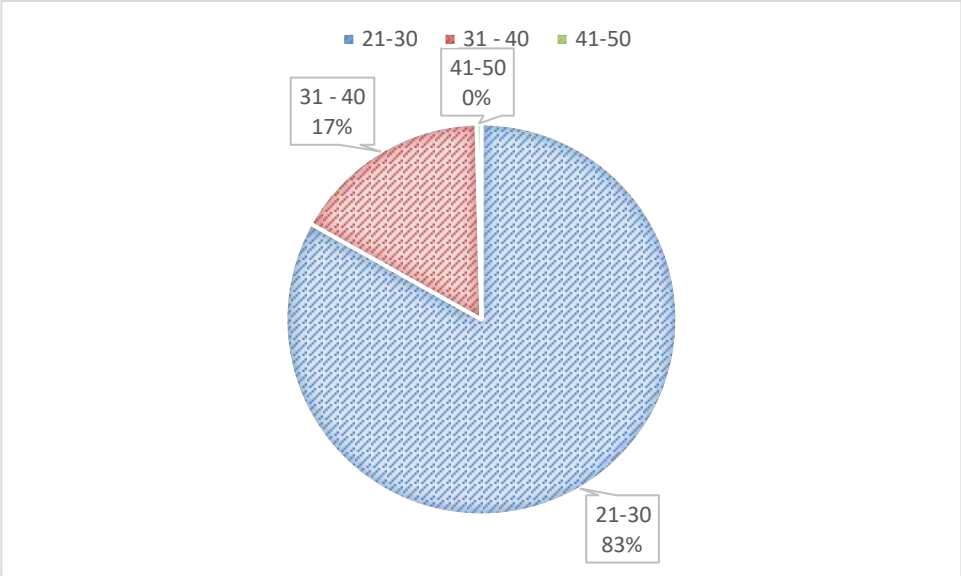

Figure 4.2.2 Age distribution of participants.

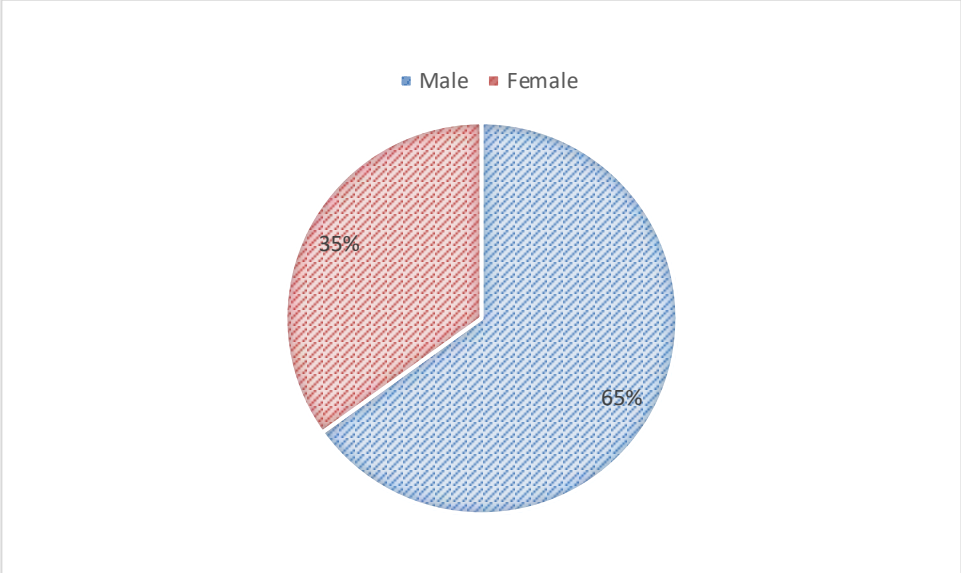

Figure 4.2.3 Gender distribution of participants.

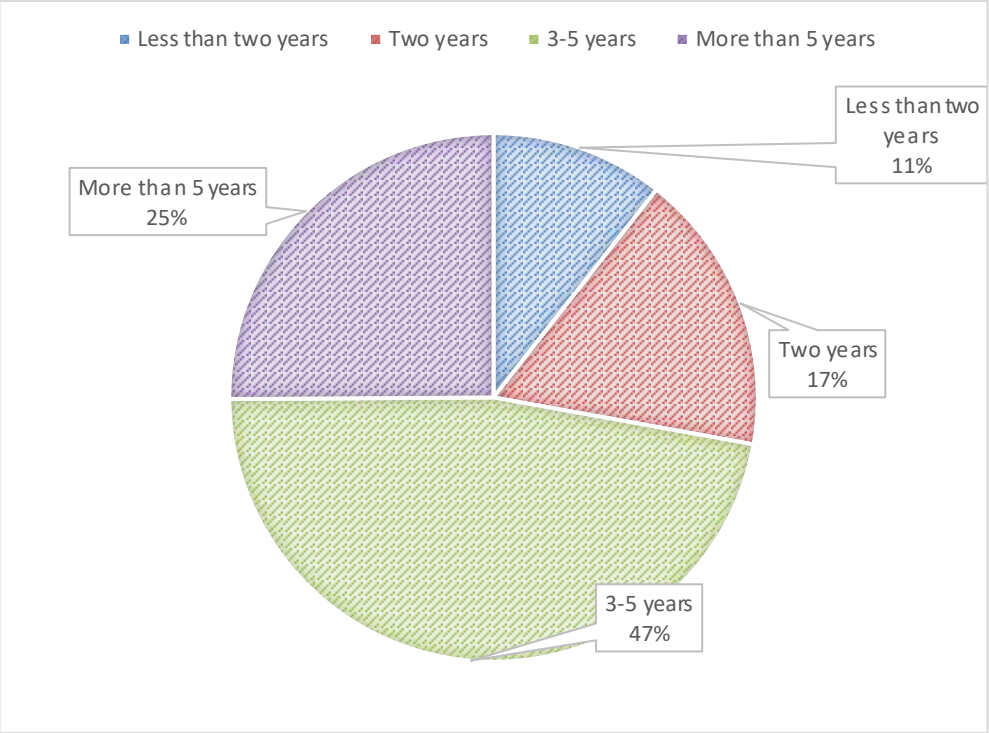

Figure 4.2.4 Professional experience of participants.

As seen in Figure 4.5 25% of the responders have faced two or less appraisal cycles, 55% have faced for five or less appraisal cycles, 14% faced for ten or less appraisal cycles and 6 % faced more than 10 appraisal cycles.

Figure 4.7 presents the type of organizations that the survey participants belong to. 37% of the participants were from product based organizations, 24 % were from service based organizations, 38 % were from both product based and service based organizations, and 1% were from other types of organizations such as Telecommunication industry.

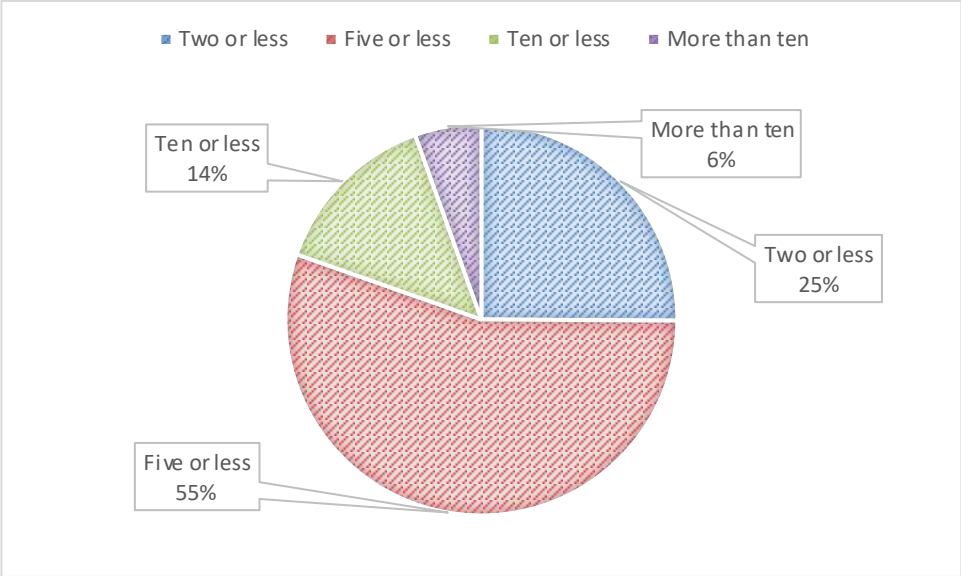

Figure 4.2.5 No of appraisal cycles faced by the participants.

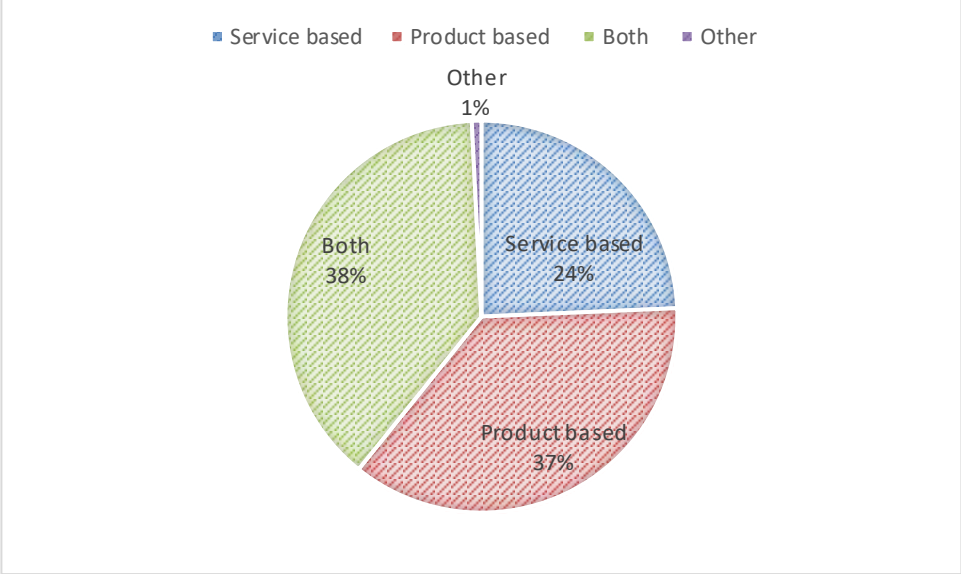

Figure 4.2.6 Survey participant's type of the organization.

4.2.1 Reliability Test for Sample

In the research survey there were 42 items, 6 independent variables, one moderating variable and one dependent variable. Table 4.3, 4.4. and 4.5 list Cronbach's Alpha Coefficients for independent, moderating, and dependent variables, respectively.

Table 4.3 Cronbach's Alpha Coefficient for independent variables.

Variable	No of items used to measure	No of items eliminated	Cronbach's Alpha Coefficient
Setting objectives	3	0	0.688
Self-evaluation	4	0	0.759
Appraisal interview	7	0	0.892
Employee participation	3	1	0.705
Personal development	6	0	0.857
Pay for performance	3	0	0.798

Table 4.4 Cronbach's Alpha Coefficient for mediator variable.

Variable	Dimension	No of Items used to measure	No of items eliminated	Cronbach's Alpha Coefficient
Employee's Satisfaction	Satisfaction for the interview	3	3	0.809
	Satisfaction for the rewarding process	3	3	0.806
Overall Variable		6	6	0.866

Table 4.5 Cronbach's Alpha Coefficient for dependent variable.

Variable	Dimension	No of Items used to measure	No of items eliminated	Cronbach's Alpha Coefficient
Employee's Performance	Adherence to time schedule	5	5	0.742
	Post-delivery defects	5	5	0.802
Overall Variable		10	10	0.838

4.3 Inter-item Correlation Analysis

This test was carried out for each variable to check whether the correlation of inter-items of each variable. Setting objectives, self-evaluation, participation for the appraisal process, appraisal interview, pay for performance, personal development opportunities were independent variables in the present study and variable items were positively correlated each other within the respective variable. Table 4.6, 4.7, 4.8, 4.9, 4.10 and 4.11 presents inter-item correlation values of each independent variable.

Table 4.6 Inter-item correlation analysis for setting objectives.

Setting Objectives	1	2	3
The project team is covered by a formal strategic plan, which sets out objectives (i.e., project plans). (1)	1.000	0.360	0.283
Goals are communicated across the team at the beginning of the appraisal cycle. (2)	0.360	1.000	0.531
The goals and objectives are clear and specific for the job role. (3)	0.283	0.531	1.000

Table 4.7 Inter-item correlation analysis for self-evaluation.

Self Evaluation	1	2	3	4
Appraisal system consists of self-evaluation opportunity/section. (1)	1.000	0.400	0.352	0.624
Factors on which you were evaluated are job relevant (i.e., specific to your job role). (2)	0.400	1.000	0.533	0.597
Supervisor considered your self-evaluation results during the interviews. (3)	0.352	0.533	1.000	0.502
Self-evaluation criteria is understandable and it evaluates tasks assigned to my job role. (4)	0.624	0.597	0.502	1.000

Table 4.8 Inter-item correlation analysis for participation for appraisal process.

Participation for the appraisal process	1	2
I have a proper understanding of the appraisal method which is been practiced in my organization. (1)	1.000	0.589
My level of involvement with the appraisal process was not limited to an observer (e.g., had opportunity to comment on my results, any involvement with the process). (2)	0.589	1.000

Table 4.9 Inter-item correlation analysis for appraisal interview.

Appraisal Interview	1	2	3	4	5	6	7
I have been interviewed by a supervisor who has the skill to give negative/constructive feedback without harming my self-confidence. (1)	1.000	0.592	0.529	0.306	0.657	0.596	0.605
Supervisor preserved the confidentiality of my appraisal results and feedback. (2)	0.592	1.000	0.562	0.381	0.504	0.540	0.533
Supervisor has helped me to understand my strengths and weaknesses. (3)	0.529	0.562	1.000	0.387	0.401	0.433	0.548
The time duration of the interview was sufficient. (4)	0.306	0.381	0.387	1.000	0.483	0.529	0.394
I got an opportunity to express/explain my side issues which affected my performance (e.g., lack of team collaboration). (5)	0.657	0.504	0.401	0.483	1.000	0.513	0.454
The interview was objective and fair (e.g., did not depend on peer pressure). (6)	0.596	0.540	0.433	0.529	0.513	1.000	0.631
Appraisal interview did not demotivate me. (7)	0.605	0.553	0.548	0.394	0.454	0.631	1.000

Table 4.10 Inter-item correlation analysis for pay for performance.

Pay for Performance	1	2	3
I have got financial rewards for my performance. (1)	1.000	0.479	0.566
I have got non-financial rewards for my performance. (2)	0.479	1.000	0.632
Employees got fair rewards based on their appraisal results. (3)	0.566	0.632	1.000

Table 4.11 Inter-item correlation analysis for personal development.

Personal Development	1	2	3	4	5	6
My organization provides professional training programs to develop employee. (1)	1.000	0.576	0.552	0.335	0.619	0.600
My lead has coached me to overcome my weaknesses. (2)	0.576	1.000	0.592	0.475	0.535	0.604
Supervisor had an individual discussion(s) with me within 1-2 months from the formal appraisal interview (e.g., about my strengths and weaknesses, tips to address weak points). (3)	0.552	0.592	1.000	0.390	0.578	0.632

My peers supported me to address my weak points. (4)	0.335	0.475	0.390	1.000	0.553	0.531
The organization provides an efficient knowledge base to enhance my knowledge (e.g., online reading materials, memberships to professional communities, etc.). (5)	0.619	0.535	0.578	0.553	1.000	0.745
Supervisor's guidelines and training programs were effective to address my weak points. (6)	0.600	0.604	0.632	0.531	0.745	1.000

Table 4.12 contains inter-item correlation within the items of employee satisfaction towards appraisal process. Employee satisfaction is the moderating variable in the present study which contains six items. Items were positively correlated within the variable. Dependent variable consists with two dimensions, adherence to schedule and output quality. Each dimension contains five items. Table 4.13 and 4.14 contain inter-item correlation values for the items in each dimension, adherence to schedule and output quality. Items were positively correlated within each dimension. Table 4.15 presents inter-item correlation values for entire dependent variable. Items are positively correlated within each measurement.

Table 4.12 Inter-item correlation analysis for employee satisfaction.

Employee Satisfaction	1	2	3	4	5	6
I am satisfied about the way that supervisor has conducted the interview. (1)	1.000	0.699	0.511	0.641	0.493	0.440
I have a favorable experience(s) on my appraisal interview. (2)	0.699	1.000	0.658	0.568	0.405	0.538
My team members have favorable experience(s) about the appraisal interview. (3)	0.511	0.658	1.000	0.447	0.530	0.606
I am satisfied about the rewarding method used in my organization. (4)	0.641	0.568	0.447	1.000	0.564	0.657
The rewarding mechanism is not bias and unfair. (5)	0.493	0.405	0.530	0.564	1.000	0.631
My team members have favorable experience(s) about rewarding mechanism. (6)	0.440	0.538	0.606	0.657	0.631	1.000

Table 4.13 Inter-item correlation analysis for adherence to schedule.

Adherence to time schedule	1	2	3	4	5
My team members' effort is reflected in appraisal results (e.g., effort to achieve time line). (1)	1.000	0.479	0.357	0.320	0.493
My team members have the intention to achieve timeline and objectives properly because it affects performance appraisal results. (2)	0.479	1.000	0.492	0.547	0.332
I am planning to achieve a higher rate in the next appraisal cycle. (3)	0.357	0.492	1.000	0.697	0.596
I have addressed my weak points to face the next appraisal cycle. (4)	0.320	0.547	0.697	1.000	0.553
Appraisal feedback, personal development programs, and rewards encouraged me to improve my performance. (5)	0.493	0.332	0.596	0.553	1.000

Table 4.14 Inter-item correlation analysis for output quality.

Output Quality	1	2	3	4	5
I focus on quality of the module before sending it to Quality Assurance (QA) team because I want to improve my performance level. (1)	1.000	0.561	0.369	0.307	0.522
I have got less bug rate than the last appraisal cycle. (2)	0.561	1.000	0.378	0.494	0.501
I am trying to minimize bug rate because it affects my appraisal ratings. (3)	0.369	0.378	1.000	0.650	0.506
My team members have reduced their defect rate compared to previous appraisal cycle. (4)	0.307	0.494	0.650	1.000	0.497
My team members are focusing on quality of the output because they want to improve their performance level. (5)	0.522	0.501	0.506	0.497	1.000

Table 4.15 Inter-item correlation for dependent variable.

	VAR00001	VAR00002	VAR00003	VAR00004	VAR00005	VAR00006	VAR00007	VAR00008	VAR00009	VAR00010
VAR00001	1.000	.502	.360	.320	.492	.062	.122	.164	.164	.393
VAR00002	.502	1.000	.505	.565	.375	.360	.286	.419	.335	.450
VAR00003	.360	.505	1.000	.698	.603	.457	.470	.428	.490	.488
VAR00004	.320	.565	.698	1.000	.556	.447	.464	.384	.443	.459
VAR00005	.492	.375	.603	.556	1.000	.182	.417	.270	.406	.374
VAR00006	.062	.360	.457	.447	.182	1.000	.561	.369	.307	.522
VAR00007	.122	.286	.470	.464	.417	.561	1.000	.378	.494	.501
VAR00008	.164	.419	.428	.384	.270	.369	.378	1.000	.650	.506
VAR00009	.164	.335	.490	.443	.406	.307	.494	.650	1.000	.497
VAR00010	.393	.450	.488	.459	.374	.522	.501	.506	.497	1.000

4.4 Pearson's Correlation Analysis

Statistics generated with Pearson Correlation Matrix, is used to test the Hypothesis. Analysis based on demography also carried out for level of industry experience, number of appraisal cycles, age and type of organization.

As illustrated in Table 4.16, goal setting in appraisal process and employee performance improvement has a low inter-relationship. Therefore, null hypothesis (H10) is rejected and alternate hypothesis (H1A) is substantiated. Hence, there is a positive relationship between effective goal setting in the appraisal system and employee performance.

Table 4.16 Pearson's correlation for hypothesis 1.

Correlations

		Goal_Setting	Performance
Goal_Setting	Pearson Correlation	1	.487**
	Sig. (2-tailed)		.000
	N	223	223
Performance	Pearson Correlation	.487**	1
	Sig. (2-tailed)	.000	
	N	223	223

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

Table 4.17 Pearson's correlation for hypothesis 2.

Correlations

		Performance	Self-evaluation
Performance	Pearson Correlation	1	.254**
	Sig. (2-tailed)		.000
	N	223	223
Self-evaluation	Pearson Correlation	.254**	1
	Sig. (2-tailed)	.000	
	N	223	223

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

As illustrated in Table 4.17, self-evaluation in appraisal process and employee performance improvement has no inter-relationship. Therefore, null hypothesis (H_{20}) is substantiated and alternate hypothesis (H_{2A}) is rejected. Hence, there is no positive linear relationship between self-evaluation criteria in appraisal system and employee performance.

As illustrated in Table 4.18, participation for the appraisal process and employee performance improvement has no inter-relationship. Therefore, null hypothesis (H_{30}) is substantiated and alternate hypothesis (H_{3A}) is rejected. Hence, there is no positive linear relationship between employee participation for the appraisal process and employee performance.

As illustrated in Table 4.19, appraisal interview and employee performance improvement has a weak positive linear relationship. Therefore. null hypothesis (H_{40}) is rejected and alternate hypothesis (H_{4A}) is substantiated. Hence, there is a positive correlation between appraisal interview and employee performance.

Table 4-18 Pearson's correlation for hypothesis 3.

Correlations

		Performance	Participation
Performance	Pearson Correlation	1	.290**
	Sig. (2-tailed)		.000
	N	223	223
Participation	Pearson Correlation	.290**	1
	Sig. (2-tailed)	.000	
	N	223	223

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

Table 4.19 Pearson's correlation for hypothesis 4.

Correlations

		Performance	Appraisal Interview
Performance	Pearson Correlation	1	.435**
	Sig. (2-tailed)		.000
	N	223	223
Appraisal Interview	Pearson Correlation	.435**	1
	Sig. (2-tailed)	.000	
	N	223	223

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

Table 4.20 Pearson's correlation for hypothesis 5.

Correlations

		Performance	Pay_for_Performance
Performance	Pearson Correlation	1	.417**
	Sig. (2-tailed)		.000
	N	223	223
Pay_for_Performance	Pearson Correlation	.417**	1
	Sig. (2-tailed)	.000	
	N	223	223

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

As illustrated in Table 4.20, pay for performance and employee performance improvement has a weak positive linear relationship. Therefore, null hypothesis (H_{50}) is rejected and alternate hypothesis (H_{5A}) is substantiated. Hence, there is a positive correlation between pay for performance and employee performance.

As illustrated in Table 4.21, personal development opportunities and employee performance improvement has a weak positive linear relationship. Therefore, null hypothesis (H_{60}) is rejected and alternate hypothesis (H_{6A}) is substantiated. Hence, there is a positive correlation between personal development opportunities and employee performance.

Table 4-21 Pearson's correlation for hypothesis 6.

Correlations

		Performance	Personal Development
Performance	Pearson Correlation	1	.476**
	Sig. (2-tailed)		.000
	N	223	223
Personal Development	Pearson Correlation	.476**	1
	Sig. (2-tailed)	.000	
	N	223	223

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

Hypothesis 7 was checked using mediator analysis. There are four steps in mediator analysis:

1. Show that the independent variable correlates with the dependent variable.
2. Show that the independent variable correlates with mediator.
3. Show that mediator affects dependent variable.
4. To establish the relationship the correlation between independent and dependent variable should be zero. If above three steps are true and the forth one is false that means partial mediation is indicted.

Table 4-22 Pearson's correlation for hypothesis 7 - I

Correlations

		Performance	Appraisal Interview	Satisfaction
Performance	Pearson Correlation	1	.435**	.620**
	Sig. (2-tailed)		.000	.000
	N	223	223	223
Appraisal Interview	Pearson Correlation	.435**	1	.608**
	Sig. (2-tailed)	.000		.000
	N	223	223	223
Satisfaction	Pearson Correlation	.620**	.608**	1
	Sig. (2-tailed)	.000	.000	
	N	223	223	223

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

According to Table 4.22 the correlation between appraisal interview and performance is 0.435, correlation between appraisal interview and satisfaction is 0.608 and the correlation between satisfaction and performance is 0.620. Hence, there is a moderate relationship between satisfaction and employee performance. Satisfaction acts as partial mediator between appraisal interview and employee performance. Therefore, null hypothesis (H_{70}) is rejected and alternate hypothesis (H_{7A}) is substantiated. Hence, employee performance is mediated by employee satisfaction towards appraisal interview and pay for performance.

Table 4-23 Pearson's correlation for hypothesis 7 – II.

Correlations

		Performance	Satisfaction	Pay_for_Performance
Performance	Pearson Correlation	1	.620**	.417**
	Sig. (2-tailed)		.000	.000
	N	223	223	223
Satisfaction	Pearson Correlation	.620**	1	.650**
	Sig. (2-tailed)	.000		.000
	N	223	223	223
Pay_for_Performance	Pearson Correlation	.417**	.650**	1
	Sig. (2-tailed)	.000	.000	
	N	223	223	223

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

According to Table 4.23 the correlation between pay for performance and performance is 0.417, correlation between pay for performance and satisfaction is 0.650 and the correlation between satisfaction and performance is 0.620. Hence, there is a moderate relationship between satisfaction and performance. Satisfaction acts as partial mediator between pay for performance and employee performance. Therefore, null hypothesis (H_{70}) is rejected and alternate hypothesis (H_{7A}) is substantiated. Hence, employee performance is mediated by employee satisfaction towards appraisal interview and pay for performance. The mediation is partial mediation.

4.5 Discussion on Results

According to research findings, performance appraisals and software engineers' work improvement in IT organizations has a moderate relationship. According to Pearson's correlations calculated for each variable, goal setting in the appraisal process, appraisal interviews, personal development opportunities and pay for performance had weak relationship with performance improvement. Self-evaluation facility in appraisal process, employee participation for the process had no positive relationships with performance improvement in software engineers. Satisfaction for appraisal interview and rewarding mechanism acted as a moderate mediator for performance.

Pearson's correlations were calculated for demographic categories as well. Number of appraisal cycles faced, level of industry experience and type of the organization were taken in to consideration. The group who has faced two or less appraisal cycles indicated moderate correlation with performance improvement. In that category there was a weak relationship in self-evaluation and performance improvement. The category who has faced five or less appraisal cycles also indicated similar characteristics to the pervious group. The group who has faced ten or less appraisal cycles did not show any significant relationship between appraisals and performance improvements. Appendix B, Table A1.2 to Table A1.33 contains Pearson correlation values for number of appraisal cycles.

Analysis was done for level of industry experience as well. Self-evaluation, participation for the appraisal process, appraisal interview, and pay for performance, personal development opportunities and satisfaction did not show any significance relationship with performance improvement in the category that has more than five years of industry experience. Goal setting, appraisal interview, pay for performance, personal development opportunities indicated moderate correlation with performance improvement in the category of employees who have three to five years of industry experience. For that category satisfaction towards appraisal interview and rewarding acted as a moderate mediator factor for performance. Self-evaluation and participation for appraisal process showed weak relationships with performance in the groups of employees who have three to five years of experience and two years of experience, there was no impact in the group of who have less than two years of experience. Goal setting showed a strong relationship with performance improvement in the group of two years of experience. Other variables have moderate relationships for performance improvement in the group of two years of experience. The interesting thing in the group who has less than two years of industry experience is there was a very strong significance between pay for performance and performance improvement. The value is 0.825. Goal setting and appraisal interview showed moderate correlation with performance improvement in that group. Satisfaction also acted as a moderate mediator. Appendix B, Table A1.34 to Table A1.65 contains Pearson correlation values for level of industry experience.

Pearson's correlation analysis done for type of the organization showed similar results. Goal setting, self-evaluation, participation for the appraisal process, appraisal interview, pay for performance and personal development opportunities showed moderate correlation to performance improvement in all three groups. Satisfaction acted as a moderate mediator factor for performance improvement in this analysis. Appendix B, Table A1.66 to Table A1.89 contains Pearson correlation values for the type of the organization. Appendix B Table 90, 91 and 92 contains summaries of number of appraisal cycles, level of industry experience and organization type respectively.

Related work in other industries have shown strong relationships in goal setting, self-evaluation, participation for the appraisal process, appraisal interview, pay for performance with respective to performance improvement. The impact of those factors was differing to software developing field. As cited in literature review software engineering field has its unique features and software engineers are knowledge workers. So the impact of performance appraisals on employee work improvement in that field indicated different results and it can be expected. A research by Guhanathan (2008) in this area considering software professionals, concluded that the appraisal methods used by Sri Lankan IT organizations are consist with three major components, employee participation in the process, goal setting and feedback. Moreover, it concluded that acceptance for appraisal process leads to satisfaction and satisfaction leads to more favorable outcomes such as performance enhancement and motivation. Present study was conducted with the consideration of major components in performance appraisal process and their impact to employee work improvement. Satisfaction with appraisal interview and rewards acted as a moderate mediator factor for performance improvement.

4.6 Summary

Inter-item correlation and Cronbach's Alpha Coefficient were calculated to check the validity of questionnaire questions. Based on resulted values it can be concluded that

all questions used in survey are valid. Pearson's correlation is used to check hypothesis one to seven. Table 4-24 presents summary of Pearson's correlation values.

Table 4-24 Summary of Pearson's Correlation Values

Hypothesis	Pearson's correlation value	Status
1 – Goal setting – Performance improvement	0.487	Weak
2 - Self-evaluation-performance improvement	0.254	No
3 – Participation for the process -Performance improvement	0.290	No
4 – Appraisal interview - Performance improvement	0.435	Weak
5 – Pay for performance -Performance improvement	0.417	Weak
6 – Personal development opportunities -Performance improvement	0.476	Weak
7 – Satisfaction on appraisal interview and rewarding process in performance improvement	0.620	Moderate

5 SUMMARY

This chapter describes conclusions of the study, recommendations and limitations of the present study. Section 5.1 presents the research implications. Section 5.2 presents limitations and Section 5.3 presents future work.

5.1 Research Implications

The purpose of the research study was to empirically study the impact of performance appraisals on employee work improvement in IT organizations. The selected sample was software engineers who have faced at least one performance appraisal cycle. The study focused on major aspects of performance appraisal process. Goal setting, self-evaluation facility, participation for the appraisal process, pay for performance and personal development opportunities are independent variables in the present study. Hypothesis were developed to check the impact of above six variables on employee performance improvement. A hypothesis (Hypothesis 7) was developed to study the role of satisfaction of appraisal interview and rewarding process on performance improvement. The questionnaire contained forty eight items with six demographic questions. Demographic questions were based on age, gender, number of appraisal cycles faced, industry experience, and type of the organization and job role. Cronbach's Alpha Coefficient and inter-item correlation were used to check the reliability of questionnaire questions. Analysis were carried out using IBM SPSS version 20 and analysis method was Pearson's correlation.

Hypothesis 01 was, there is a positive relationship between effective goal setting in the appraisal system and employee performance. According to analysis, goal setting in the appraisal system and employee performance had a positive low relationship. Therefore, hypothesis 01 was accepted. Most of organizations have goal setting in their project management activities. Employee's performance is evaluated on their achievements. All employees have to adhere project team's strategic goals. When considering about demographic analysis, employees who have faced ten or less appraisal cycles showed a weak relationship between goal setting and performance

improvement. Employees who has two years of industry experience showed a strong relationship. When employees are getting more experience in the industry the impact of performance appraisals on work improvement is reducing.

Hypothesis 02 was, there is a positive relationship between self-evaluation criteria in appraisal system and employee performance. The correlation value was 0.254. So that there is no positive relationship between self-evaluation and performance improvement. Employees who has five years or more experience did not show any relationship between these independent and dependent variables. Employees who have two years of industry experience showed a moderate relationship between self-evaluation and employee performance improvement. When the employee is getting more experienced it is significant that the impact of self-evaluation on performance improvement is decreasing.

"There is a positive relationship between employee participation for the appraisal process and employee performance" is Hypothesis 03. Pearson's correlation value was 0.290. Hence, the conclusion was that there is no positive relationship between above two variables. In demographic analysis these variables did not show any relationship for employees who have faced less than two years of experience and more than five years of experience. Employees who have less than two years of experience are fresher professionals for the field. They are not considerably involve in designing evaluation criteria and rate other employees. So the impact of participation on employee performance is reduced. Employees who has more experience are involve in designing rating criteria and rate other employees. But they do not perceive it as a reason to improve their performance.

Hypothesis 04 was, there is a positive correlation between appraisal interview and employee performance. Pearson's correlation was 0.435. So that there is a positive low correlation between appraisal interview and performance improvement. Appraisal interview is the stage that always subjected to criticisms by employees. This variable also showed the previous pattern in demographic analysis. Senior employees did not show any relationship between these two variables.

Hypothesis 05 was, there is a positive relationship between pay for performance and employee performance. Pearson's correlation value was 0.417. So there is a positive low relationship between variables. Employees who has less than two years of industry experience showed a very strong positive correlation between pay for performance and performance improvement. Senior employees (more than five years of experience) did not show any relationship between these variables. Pay for performance is not a motivational factor for all employees. When they become more experienced they do not perceive monetary rewards as an important factor.

"There is a positive correlation between personal development process and employee performance" is hypothesis 06. There is a positive weak correlation between personal development opportunities and performance improvement. Same pattern repeated for this hypothesis as well in demographic analysis.

Hypothesis 07 was, employee performance is mediated by employee satisfaction towards appraisal interview and pay for performance. According to analysis, satisfaction acts as a moderate mediator for performance improvement. For employees who have more than five years of experience, null hypothesis is accepted.

By considering the above results the conclusion is performance appraisal has a moderate impact on performance improvement in software engineers.

The researcher provided a comments section in the questionnaire to express employees ideas. All comments were against performance appraisal. Some comments include

- "*appraisal mechanism used is not good and unfair*"
- "Performance appraisal is a stupid HR activity", "I personally do not believe in 'Performance Appraisals. I hate them. And when it comes to big companies, Performance Appraisals are sometimes doing injustice to some of the employees". So most of employees do not consider performance appraisal is a fair and unbiased process in Sri Lankan IT sector. So that they do not perceive it as a strong motivation for performance improvement.

Human resource management professionals have to consider above facts and fine tune their performance appraisal process. Actions have to be taken to reduce criticisms on

appraisal interview and pay for performance. Employees are more sensitive for those two facts. If the employee is satisfied about appraisal interview and monetary rewarding mechanism it leads to performance improvement.

5.2 Limitations

There are a number of research reports based on performance appraisals, but there is a very small number of literature sources relevant to ICT. So definitions were not from pure IT related researches. Information technology organizations adopted this concept from manufacturing industry and adjusted it to address requirements. So selected variables are applicable to information technology industry although definitions were derived from common research papers.

There was a data limitation because the present study could not reach required full sample. The required sample was 376. 255 responses were returned. But number of valid responses was 223 and it was 59.3% of the full sample. The researcher made the questionnaire available for approximately 800 audiences. Data collection was more difficult than expected.

5.3 Future Work

Future research can be conducted by enhancing the method used to analyze the impact of performance appraisal on employee work improvement in IT organizations. It can be extended for various performance appraisal methods e.g., 360 degree performance appraisal, etc. If the researcher can access performance measuring tools and surveys which are used by Sri Lankan IT organizations, it will be more efficient to critically evaluate each process and identify the most effective method. Different IT related job roles can be studied in future studies e.g., Quality assurance engineers, Business analysis, etc. Researches can be carried out to find solutions for criticisms on performance appraisal in information technology organizations. Future work can be conducted to find out improvements for Management by Objectives (MBO) method since it is widely used in software developing organizations.

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APPENDIX A: QUESTIONNIRE

Dear Sir/Madam,

We are conducting a research study to analyse the relationship between performance appraisals and their impact on employee performance improvement IT-related organizations. As a member of the Sri Lankan IT community, we are inviting you to participate in this study by completing the following questionnaire. It will take about 15 minutes to complete the survey.

This survey is stipulated confidential and anonymous. Your responses will not be identified with you personally and all findings will appear in aggregated form. You and your organization will not be linked in any manner.

Your participation in the research would be greatly appreciated. If you have any queries or wish to know more please feel free to contact us using the details provided below.

Thank you very much for your time and help in making this study possible.

Sincerely,

Prasadi Mullegamgoda and Dilum Bandara
mahesha.14@cse.mrt.ac.lk and dilumb@cse.mrt.ac.lk
+94716421905
Dept. of Computer Science and Engineering,
University of Moratuwa

A1- 1 Questionnaire

Category	Factor	Questions
Section 02 Demographic questions		01) What is your age group 1. 21-30 2. 31-40 3. 41-50 4. 51-60 02) How many appraisal cycles did you face 1. Two or less 2. Five or less 3. Ten or less 4. More than ten 03) What is your job role 1. Software Engineer/Senior Software Engineer 2. Quality assurance Engineer 3. Project manager 4. Systems Administrator 5. Other 04) Gender 1. Male 2. Female 05) Industry experience 1. Less than two years 2. Two years 3. 3-5 years 4. More than 5 years 06) Type of the organization 1. Product based 2. Service based 3. Both 4. Other
Planning	Section 03 Goal setting	01) The project team is covered by a formal strategic plan, which sets out objectives (i.e., project plans). Strongly agree → Strongly disagree 02) Goals are communicated across the team at the beginning of the appraisal cycle. Strongly agree → Strongly disagree

Category	Factor	Questions
		03) Goals and objectives are clear and specific for the job role. Strongly agree → Strongly disagree
Managing	Section 04 Self-evaluation	04) Appraisal system consists of self-evaluation opportunity/section. Strongly agree → Strongly disagree 05) Factors on which you were evaluated are job relevant (i.e., specific to your job role). Strongly agree → Strongly disagree 06) Supervisor considered your self-evaluation results during the interviews. Strongly agree → Strongly disagree 07) Self-evaluation criteria is understandable and it evaluates tasks assigned to my job role. Strongly agree → Strongly disagree
	Employee participation	08) I have a proper understanding of the appraisal method which is been practiced in my organization. Strongly agree → Strongly disagree 09) My level of involvement with the appraisal process was not limited to an observer (e.g., had opportunity to comment on my results, any involvement with the process, etc.). Strongly agree → Strongly disagree 10) I have got an opportunity to rate my peers and supervisor. Strongly agree → Strongly disagree
	Section 05 Appraisal interview	11) I have been interviewed by a supervisor who has the skill to give negative/constructive feedback without harming my self-confidence. Strongly agree → Strongly disagree 12) Supervisor preserved the confidentiality of my appraisal results and feedback. Strongly agree → Strongly disagree

Category	Factor	Questions
		13) Supervisor has helped me to understand my strengths and weaknesses. Strongly agree → Strongly disagree 14) The time duration of the interview was sufficient. Strongly agree → Strongly disagree 15) I got an opportunity to express/explain my side issues which affected my performance (e.g., lack of team collaboration). Strongly agree → Strongly disagree 16) The interview was objective and fair (e.g., did not depend on peer pressure). Strongly agree → Strongly disagree 17) Appraisal interview did not demotivate me. Strongly agree → Strongly disagree
Rewarding	**Section 06** Pay for Performance	18) I have got financial rewards for my performance. Strongly agree → Strongly disagree 19) I have got non-financial rewards for my performance. Strongly agree → Strongly disagree 20) Employees got fair rewards based on their appraisal results. Strongly agree → Strongly disagree
	Section 07 Personal Development	21) My organization provides professional training programs to develop employees. Strongly agree → Strongly disagree 22) My lead has coached me to overcome my weaknesses. Strongly agree → Strongly disagree 23) Supervisor had an individual discussion(s) with me within 1-2 months from the formal appraisal interview (e.g., about my strengths and weaknesses, tips to address weaknesses, etc.). Strongly agree → Strongly disagree

Category	Factor	Questions
		24) My peers supported me to address my weak points. Strongly agree → Strongly disagree 25) The organization provides an efficient knowledge base to enhance my knowledge (e.g., online reading materials, memberships to professional communities, etc.). Strongly agree → Strongly disagree 26) Supervisor's guidelines and training programs were effective to address my weak points. Strongly agree → Strongly disagree
Moderating Variable – Employee's satisfaction on appraisal process	Section 08 Appraisal interview	27) I am satisfied about the way that supervisor has conducted the interview. Strongly agree → Strongly disagree 28) I have a favorable experience(s) on my appraisal interview. Strongly agree → Strongly disagree 29) My team members have favorable experience(s) about the appraisal interview. Strongly agree → Strongly disagree
	Rewarding mechanism	30) I am satisfied about the rewarding method used in my organization. Strongly agree → Strongly disagree 31) The rewarding mechanism is not bias and unfair. Strongly agree → Strongly disagree 32) My team members have favorable experience(s) about rewarding mechanism. Strongly agree → Strongly disagree
Dependent Variable –	Section 09 Adherence to Schedule	33) My team members' effort is reflected in appraisal results (e.g., effort to achieve time line). Strongly agree → Strongly disagree

Category	Factor	Questions
Performance improvement		34) My team members have the intention to achieve timeline and objectives properly because it affects performance appraisal results. Strongly agree → Strongly disagree 35) I am planning to achieve a higher rate in the next appraisal cycle. Strongly agree → Strongly disagree 36) I have addressed my weak points to face the next appraisal cycle. Strongly agree → Strongly disagree 37) Appraisal feedback, personal development programs, and rewards encouraged me to improve my performance. Strongly agree → Strongly disagree
	Section 10 Output Quality	38) I focus on quality of the module before sending it to Quality Assurance (QA) team because I want to improve my performance level. Strongly agree → Strongly disagree 39) I have got less bug rate than the last appraisal cycle. Strongly agree → Strongly disagree 40) I am trying to minimize bug rate because it affects my appraisal ratings. Strongly agree → Strongly disagree 41) My team members have reduced their defect rate compared to previous appraisal cycle. Strongly agree → Strongly disagree 42) My team members are focusing on quality of the output because they want to improve their performance level. Strongly agree → Strongly disagree
		Comments : …….

Sections refer to sections in the Google from

APPENDIX B: Demographic Analysis

Number of Appraisal cycles

More than Ten

A2- 2 Hypothesis 01 for more than ten appraisal cycles

Correlations

		Goal_Setting	Performance
Goal_Setting	Pearson Correlation	1	.116
	Sig. (2-tailed)		.733
	N	11	11
Performance	Pearson Correlation	.116	1
	Sig. (2-tailed)	.733	
	N	11	11

There is no statistically significant correlation between goal setting in the appraisal process and performance improvement in the sample that have faced more than ten appraisal cycles.

A2- 3 Hypothesis 02 for more than ten appraisal cycles

Correlations

		Performance	Self_Evaluation
Performance	Pearson Correlation	1	.643*
	Sig. (2-tailed)		.033
	N	11	11
Self_Evaluation	Pearson Correlation	.643*	1
	Sig. (2-tailed)	.033	
	N	11	11

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

There is a statistically significant correlation between self-evaluation in the appraisal process and performance improvement in the sample that have faced more than ten appraisal cycles. There is a strong correlation between two variables.

A2- 4 Hypothesis 03 for more than ten appraisal cycles

Correlations

		Performance	Participation
Performance	Pearson Correlation	1	.374
	Sig. (2-tailed)		.256
	N	11	11
Participation	Pearson Correlation	.374	1
	Sig. (2-tailed)	.256	
	N	11	11

There is no statistically significant correlation between participation for the appraisal process and performance improvement in the sample that have faced more than ten appraisal cycles.

A2- 5 Hypothesis 04 for more than ten appraisal cycles

Correlations

		Performance	Appraisal_Interview
Performance	Pearson Correlation	1	.690*
	Sig. (2-tailed)		.019
	N	11	11
Appraisal_Interview	Pearson Correlation	.690*	1
	Sig. (2-tailed)	.019	
	N	11	11

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

There is a statistically significant correlation between appraisal interview and performance improvement in the sample that have faced more than ten appraisal cycles. There is a strong relationship between two variables.

A2- 6 Hypothesis 05 for more than ten appraisal cycles

Correlations

		Performance	Pay_for_Performance
Performance	Pearson Correlation	1	.719*
	Sig. (2-tailed)		.013
	N	11	11
Pay_for_Performance	Pearson Correlation	.719*	1
	Sig. (2-tailed)	.013	
	N	11	11

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

There is a statistically significant correlation between pay for performance and performance improvement in the sample that have faced more than ten appraisal cycles. There is a strong relationship between two variables.

A2- 7 Hypothesis 06 for more than ten appraisal cycles

Correlations

		Performance	Personal_Development
Performance	Pearson Correlation	1	.357
	Sig. (2-tailed)		.281
	N	11	11
Personal_Development	Pearson Correlation	.357	1
	Sig. (2-tailed)	.281	
	N	11	11

There is no statistically significant correlation between personal development opportunities and performance improvement in the sample that have faced more than ten appraisal cycles.

A2- 8 Hypothesis 07 _I for more than ten appraisal cycles

Correlations

		Performance	Appraisal_Interview	Satisfaction
Performance	Pearson Correlation	1	.690*	.702*
	Sig. (2-tailed)		.019	.016
	N	11	11	11
Appraisal_Interview	Pearson Correlation	.690*	1	.759**
	Sig. (2-tailed)	.019		.007
	N	11	11	11
Satisfaction	Pearson Correlation	.702*	.759**	1
	Sig. (2-tailed)	.016	.007	
	N	11	11	11

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

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

There is a strong correlation between appraisal interview and employee satisfaction. The value is 0.702. Satisfaction and performance also have a strong correlation and the value is 0.759. Appraisal interview and performance also has a relationship. So satisfaction acts as a moderately mediator factor between appraisal interview and performance improvement in the category of the employees who have faced more than ten appraisal cycles.

A2- 9 Hypothesis 07_II for more than ten appraisal cycles

Correlations

		Performance	Satisfaction	Pay_for_Performance
Performance	Pearson Correlation	1	.702*	.719*
	Sig. (2-tailed)		.016	.013
	N	11	11	11
Satisfaction	Pearson Correlation	.702*	1	.510
	Sig. (2-tailed)	.016		.109
	N	11	11	11
Pay_for_Performance	Pearson Correlation	.719*	.510	1
	Sig. (2-tailed)	.013	.109	
	N	11	11	11

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

There is a moderate correlation between pay for performance and employee satisfaction. The value is 0.510. Satisfaction and performance also have a strong correlation and the value is 0.702. Pay for performance and performance also have a strong relationship. So satisfaction acts as a moderately mediator factor between pay for performance and performance improvement in the category of the employees who have faced more than ten appraisal cycles.

Ten or Less

A2- 10 Hypothesis 01 for ten or less appraisal cycles

Correlations

		Goal_Setting	Performance
Goal_Setting	Pearson Correlation	1	.422*
	Sig. (2-tailed)		.025
	N	28	28
Performance	Pearson Correlation	.422*	1
	Sig. (2-tailed)	.025	
	N	28	28

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

There is a weak correlation between goal setting in the appraisal process and performance improvement in the sample that have faced ten or less appraisal cycles.

A2- 11 Hypothesis 02 for ten or less appraisal cycles

Correlations

		Performance	Self_Evaluation
Performance	Pearson Correlation	1	.056
	Sig. (2-tailed)		.778
	N	28	28
Self_Evaluation	Pearson Correlation	.056	1
	Sig. (2-tailed)	.778	
	N	28	28

There is no correlation between self-evaluation and performance improvement in the sample that have faced ten or less appraisal cycles.

A2- 12 Hypothesis 03 for ten or less appraisal cycles

Correlations

		Performance	Participation
Performance	Pearson Correlation	1	-.091
	Sig. (2-tailed)		.645
	N	28	28
Participation	Pearson Correlation	-.091	1
	Sig. (2-tailed)	.645	
	N	28	28

There is no correlation between participation for the appraisal process and performance improvement in the sample that have faced ten or less appraisal cycles.

A2- 13 Hypothesis 04 for ten or less appraisal cycles

Correlations

		Performance	Appraisal_Interview
Performance	Pearson Correlation	1	-.054
	Sig. (2-tailed)		.785
	N	28	28
Appraisal_Interview	Pearson Correlation	-.054	1
	Sig. (2-tailed)	.785	
	N	28	28

There is no correlation between appraisal interview and performance improvement in the sample that have faced ten or less appraisal cycles.

A2- 14 Hypothesis 05 for ten or less appraisal cycles

Correlations

		Performance	Pay_for_Performance
Performance	Pearson Correlation	1	.107
	Sig. (2-tailed)		.588
	N	28	28
Pay_for_Performance	Pearson Correlation	.107	1
	Sig. (2-tailed)	.588	
	N	28	28

There is no correlation between pay for performance and performance improvement in the sample that have faced ten or less appraisal cycles.

A2- 15 Hypothesis 06 for ten or less appraisal cycles

Correlations

		Performance	Personal_Development
Performance	Pearson Correlation	1	.054
	Sig. (2-tailed)		.784
	N	28	28
Personal_Development	Pearson Correlation	.054	1
	Sig. (2-tailed)	.784	
	N	28	28

There is no correlation between personal development opportunities and performance improvement in the sample that have faced ten or less appraisal cycles.

A2- 16 Hypothesis 07_I for ten or less appraisal cycles

Correlations

		Performance	Appraisal_Interview	Satisfaction
Performance	Pearson Correlation	1	-.054	.112
	Sig. (2-tailed)		.785	.569
	N	28	28	28
Appraisal_Interview	Pearson Correlation	-.054	1	.647**
	Sig. (2-tailed)	.785		.000
	N	28	28	28
Satisfaction	Pearson Correlation	.112	.647**	1
	Sig. (2-tailed)	.569	.000	
	N	28	28	28

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

A2- 17 Hypothesis 07_II for ten or less appraisal cycles

Correlations

		Performance	Satisfaction	Pay_for_Performance
Performance	Pearson Correlation	1	.112	.107
	Sig. (2-tailed)		.569	.588
	N	28	28	28
Satisfaction	Pearson Correlation	.112	1	.512**
	Sig. (2-tailed)	.569		.005
	N	28	28	28
Pay_for_Performance	Pearson Correlation	.107	.512**	1
	Sig. (2-tailed)	.588	.005	
	N	28	28	28

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

There is no correlation between satisfaction for the process and performance improvement in the sample that have faced ten or less appraisal cycles. So satisfaction is not acting as mediator variable for this group.

Five or Less

A2- 18 Hypothesis 01 for five or less appraisal cycles

Correlations

		Goal_Setting	Performance
Goal_Setting	Pearson Correlation	1	.535**
	Sig. (2-tailed)		.000
	N	127	127
Performance	Pearson Correlation	.535**	1
	Sig. (2-tailed)	.000	
	N	127	127

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

There is a moderate correlation between goal setting in the appraisal process and performance improvement in the sample that have faced five or less appraisal cycles.

A2- 19 Hypothesis 02 for five or less appraisal cycles

Correlations

		Performance	Self_Evaluation
Performance	Pearson Correlation	1	.235**
	Sig. (2-tailed)		.008
	N	127	127
Self_Evaluation	Pearson Correlation	.235**	1
	Sig. (2-tailed)	.008	
	N	127	127

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

There is a weak correlation between self-evaluation process and performance improvement in the sample that have faced five or less appraisal cycles.

A2- 20 Hypothesis 03 for five or less appraisal cycles

Correlations

		Performance	Participation
Performance	Pearson Correlation	1	.361**
	Sig. (2-tailed)		.000
	N	127	127
Participation	Pearson Correlation	.361**	1
	Sig. (2-tailed)	.000	
	N	127	127

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

There is a weak correlation between participation for the appraisal process and performance improvement in the sample that have faced five or less appraisal cycles.

A2- 21 Hypothesis 04 for five or less appraisal cycles

Correlations

		Performance	Appraisal_Interview
Performance	Pearson Correlation	1	.474**
	Sig. (2-tailed)		.000
	N	127	127
Appraisal_Interview	Pearson Correlation	.474**	1
	Sig. (2-tailed)	.000	
	N	127	127

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

There is a moderate correlation between appraisal interview and performance improvement in the sample that have faced five or less appraisal cycles.

A2- 22 Hypothesis 05 for five or less appraisal cycles

Correlations

		Performance	Pay_for_Performance
Performance	Pearson Correlation	1	.440**
	Sig. (2-tailed)		.000
	N	127	127
Pay_for_Performance	Pearson Correlation	.440**	1
	Sig. (2-tailed)	.000	
	N	127	127

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

There is a moderate correlation between pay for performance and performance improvement in the sample that have faced five or less appraisal cycles.

A2- 23 Hypothesis 06 for five or less appraisal cycles

Correlations

		Performance	Personal_Development
Performance	Pearson Correlation	1	.534**
	Sig. (2-tailed)		.000
	N	127	127
Personal_Development	Pearson Correlation	.534**	1
	Sig. (2-tailed)	.000	
	N	127	127

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

There is a moderate correlation between personal development opportunities and performance improvement in the sample that have faced five or less appraisal cycles.

A2- 24 Hypothesis 07_I for five or less appraisal cycles

Correlations

		Performance	Appraisal_Interview	Satisfaction
Performance	Pearson Correlation	1	.474**	.670**
	Sig. (2-tailed)		.000	.000
	N	127	127	127
Appraisal_Interview	Pearson Correlation	.474**	1	.608**
	Sig. (2-tailed)	.000		.000
	N	127	127	127
Satisfaction	Pearson Correlation	.670**	.608**	1
	Sig. (2-tailed)	.000	.000	
	N	127	127	127

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

There is a strong correlation between appraisal interview and employee satisfaction. The value is 0.608. Satisfaction and performance also have a strong correlation and the value is 0.670. Appraisal interview and performance also have a moderate relationship. So satisfaction acts as a moderately mediator factor between appraisal

interview and performance improvement in the category of the employees who have faced five or less appraisal cycles.

A2- 25 Hypothesis 07_II for five or less appraisal cycles

Correlations

		Performance	Satisfaction	Pay_for_Performance
Performance	Pearson Correlation	1	.670**	.440**
	Sig. (2-tailed)		.000	.000
	N	127	127	127
Satisfaction	Pearson Correlation	.670**	1	.693**
	Sig. (2-tailed)	.000		.000
	N	127	127	127
Pay_for_Performance	Pearson Correlation	.440**	.693**	1
	Sig. (2-tailed)	.000	.000	
	N	127	127	127

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

There is a strong correlation between pay for performance and employee satisfaction. The value is 0.693. Satisfaction and performance also have a strong correlation and the value is 0.670. Pay for performance and performance also have a moderate relationship. So satisfaction acts as a moderately mediator factor between pay for performance and performance improvement in the category of the employees who have faced five or less appraisal cycles.

Two or Less

A2- 26 Hypothesis 01 for two or less appraisal cycles

Correlations

		Goal_Setting	Performance
Goal_Setting	Pearson Correlation	1	.517**
	Sig. (2-tailed)		.000
	N	57	57
Performance	Pearson Correlation	.517**	1
	Sig. (2-tailed)	.000	
	N	57	57

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

There is a moderate relationship between goal setting in the appraisal process and employee performance improvement in the sample that have faced two or less appraisal cycles.

A2- 27 Hypothesis 02 for two or less appraisal cycles

Correlations

		Performance	Self_Evaluation
Performance	Pearson Correlation	1	.398**
	Sig. (2-tailed)		.002
	N	57	57
Self_Evaluation	Pearson Correlation	.398**	1
	Sig. (2-tailed)	.002	
	N	57	57

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

There is a weak relationship between self-evaluation in the appraisal process and employee performance improvement in the sample that have faced two or less appraisal cycles.

A2- 28 Hypothesis 03 for two or less appraisal cycles

Correlations

		Performance	Participation
Performance	Pearson Correlation	1	.442**
	Sig. (2-tailed)		.001
	N	57	57
Participation	Pearson Correlation	.442**	1
	Sig. (2-tailed)	.001	
	N	57	57

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

There is a moderate relationship between participation for the process and employee performance improvement in the sample that have faced two or less appraisal cycles.

A2- 29 Hypothesis 04 for two or less appraisal cycles

Correlations

		Performance	Appraisal_Interview
Performance	Pearson Correlation	1	.527**
	Sig. (2-tailed)		.000
	N	57	57
Appraisal_Interview	Pearson Correlation	.527**	1
	Sig. (2-tailed)	.000	
	N	57	57

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

There is a moderate relationship between appraisal interview and employee performance improvement in the sample that have faced two or less appraisal cycles.

A2- 30 Hypothesis 05 for two or less appraisal cycles

Correlations

		Performance	Pay_for_Performance
Performance	Pearson Correlation	1	.516**
	Sig. (2-tailed)		.000
	N	57	57
Pay_for_Performance	Pearson Correlation	.516**	1
	Sig. (2-tailed)	.000	
	N	57	57

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

There is a moderate relationship between pay for performance and employee performance improvement in the sample that have faced two or less appraisal cycles.

A2- 31 Hypothesis 06 for two or less appraisal cycle

Correlations

		Performance	Personal_Development
Performance	Pearson Correlation	1	.500**
	Sig. (2-tailed)		.000
	N	57	57
Personal_Development	Pearson Correlation	.500**	1
	Sig. (2-tailed)	.000	
	N	57	57

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

There is a moderate relationship between personal development opportunities and employee performance improvement in the sample that have faced two or less appraisal cycles.

A2- 32 Hypothesis 07_I for two or less appraisal cycles

Correlations

		Performance	Appraisal_Interview	Satisfaction
Performance	Pearson Correlation	1	.527**	.735**
	Sig. (2-tailed)		.000	.000
	N	57	57	57
Appraisal_Interview	Pearson Correlation	.527**	1	.598**
	Sig. (2-tailed)	.000		.000
	N	57	57	57
Satisfaction	Pearson Correlation	.735**	.598**	1
	Sig. (2-tailed)	.000	.000	
	N	57	57	57

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

There is a moderate correlation between appraisal interview and employee satisfaction. The value is 0.598. Satisfaction and performance also have a strong correlation and the value is 0.735. Appraisal interview and performance also have a moderate relationship. So satisfaction acts as a moderately mediator factor between appraisal

interview and performance improvement in the category of the employees who have faced two or less appraisal cycles.

A2- 33 Hypothesis 07_II for two or less appraisal cycles

Correlations

		Performance	Satisfaction	Pay_for_Performance
Performance	Pearson Correlation	1	.735**	.516**
	Sig. (2-tailed)		.000	.000
	N	57	57	57
Satisfaction	Pearson Correlation	.735**	1	.654**
	Sig. (2-tailed)	.000		.000
	N	57	57	57
Pay_for_Performance	Pearson Correlation	.516**	.654**	1
	Sig. (2-tailed)	.000	.000	
	N	57	57	57

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

There is a strong correlation between pay for performance and employee satisfaction. The value is 0.654. Satisfaction and performance also have a strong correlation and the value is 0.735. Pay for performance and performance also have a moderate relationship. So satisfaction acts as a moderately mediator factor between pay for performance and performance improvement in the category of the employees who have faced two or less appraisal cycles.

Level of Industry Experience

Less than two years

A2- 34 Hypothesis 01 for less than two years of experience

Correlations

		Goal_Setting	Performance
Goal_Setting	Pearson Correlation	1	.428*
	Sig. (2-tailed)		.042
	N	23	23
Performance	Pearson Correlation	.428*	1
	Sig. (2-tailed)	.042	
	N	23	23

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

There is a moderate relationship between goal setting in the appraisal process and employee performance improvement in the sample that have less than two years of experience.

A2- 35 Hypothesis 02 for less than two years of experience

Correlations

		Performance	Self_Evaluation
Performance	Pearson Correlation	1	.409
	Sig. (2-tailed)		.053
	N	23	23
Self_Evaluation	Pearson Correlation	.409	1
	Sig. (2-tailed)	.053	
	N	23	23

There is no relationship between self-evaluation in the appraisal process and employee performance improvement in the sample that have less than two years of experience.

A2- 36 Hypothesis 03 for less than two years of experience

Correlations

		Performance	Participation
Performance	Pearson Correlation	1	.346
	Sig. (2-tailed)		.105
	N	23	23
Participation	Pearson Correlation	.346	1
	Sig. (2-tailed)	.105	
	N	23	23

There is no relationship between participation for the appraisal process and employee performance improvement in the sample that have less than two years of experience.

A2- 37 Hypothesis 04 for less than two years of experience

Correlations

		Performance	Appraisal_Interview
Performance	Pearson Correlation	1	.461*
	Sig. (2-tailed)		.027
	N	23	23
Appraisal_Interview	Pearson Correlation	.461*	1
	Sig. (2-tailed)	.027	
	N	23	23

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

There is a moderate relationship between appraisal interview and employee performance improvement in the sample that have less than two years of experience.

A2- 38 Hypothesis 05 for less than two years of experience

Correlations

		Performance	Pay_for_Performance
Performance	Pearson Correlation	1	.825**
	Sig. (2-tailed)		.000
	N	23	23
Pay_for_Performance	Pearson Correlation	.825**	1
	Sig. (2-tailed)	.000	
	N	23	23

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

There is a strong relationship between pay for performance and employee performance improvement in the sample that have less than two years of experience.

A2- 39 Hypothesis 06 for less than two years of experience

Correlations

		Performance	Personal_Development
Performance	Pearson Correlation	1	.375
	Sig. (2-tailed)		.077
	N	23	23
Personal_Development	Pearson Correlation	.375	1
	Sig. (2-tailed)	.077	
	N	23	23

There is a weak relationship between personal development opportunities and employee performance improvement in the sample that have less than two years of experience.

A2- 40 Hypothesis 07_I for less than two years of experience

Correlations

		Performance	Satisfaction	Appraisal_Interview
Performance	Pearson Correlation	1	.795**	.461*
	Sig. (2-tailed)		.000	.027
	N	23	23	23
Satisfaction	Pearson Correlation	.795**	1	.637**
	Sig. (2-tailed)	.000		.001
	N	23	23	23
Appraisal_Interview	Pearson Correlation	.461*	.637**	1
	Sig. (2-tailed)	.027	.001	
	N	23	23	23

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

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

There is a strong correlation between appraisal interview and employee satisfaction. The value is 0.637. Satisfaction and performance also have a strong correlation and the value is 0.795. Appraisal interview and performance also have a moderate relationship. So satisfaction acts as a moderately mediator factor between appraisal interview and performance improvement in the category of the employees who have less than two years of experience.

A2- 41 Hypothesis 07_II for less than two years of experience

Correlations

		Performance	Satisfaction	Pay_for_Performance
Performance	Pearson Correlation	1	.795**	.825**
	Sig. (2-tailed)		.000	.000
	N	23	23	23
Satisfaction	Pearson Correlation	.795**	1	.874**
	Sig. (2-tailed)	.000		.000
	N	23	23	23
Pay_for_Performance	Pearson Correlation	.825**	.874**	1
	Sig. (2-tailed)	.000	.000	
	N	23	23	23

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

There is a strong correlation between pay for performance and employee satisfaction. The value is 0.874. Satisfaction and performance also have a strong correlation and the value is 0.795. Pay for performance and performance also have a moderate relationship. So satisfaction acts as a moderately mediator factor between pay for performance and performance improvement in the category of the employees who have less than two years of experience.

Two Years

A2- 42 Hypothesis 01 for two years of experience

Correlations

		Goal_Setting	Performance
Goal_Setting	Pearson Correlation	1	.613**
	Sig. (2-tailed)		.000
	N	39	39
Performance	Pearson Correlation	.613**	1
	Sig. (2-tailed)	.000	
	N	39	39

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

There is a strong relationship between goal setting and employee performance improvement in the sample that have two years of experience.

A2- 43 Hypothesis 02 for two years of experience

Correlations

		Performance	Self_Evaluation
Performance	Pearson Correlation	1	.263
	Sig. (2-tailed)		.105
	N	39	39
Self_Evaluation	Pearson Correlation	.263	1
	Sig. (2-tailed)	.105	
	N	39	39

There is no relationship between self-evaluation and employee performance improvement in the sample that have two years of experience.

A2- 44 Hypothesis 03 for two years of experience

Correlations

		Performance	Participation
Performance	Pearson Correlation	1	.366*
	Sig. (2-tailed)		.022
	N	39	39
Participation	Pearson Correlation	.366*	1
	Sig. (2-tailed)	.022	
	N	39	39

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

There is a weak relationship between participation for the appraisal process and employee performance improvement in the sample that have two years of experience.

A2- 45 Hypothesis 04 for two years of experience

Correlations

		Performance	Appraisal_Interview
Performance	Pearson Correlation	1	.415**
	Sig. (2-tailed)		.009
	N	39	39
Appraisal_Interview	Pearson Correlation	.415**	1
	Sig. (2-tailed)	.009	
	N	39	39

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

There is a moderate relationship between appraisal interview and employee performance improvement in the sample that have two years of experience.

A2- 46 Hypothesis 05 for two years of experience

Correlations

		Performance	Pay_for_Performance
Performance	Pearson Correlation	1	.452**
	Sig. (2-tailed)		.004
	N	39	39
Pay_for_Performance	Pearson Correlation	.452**	1
	Sig. (2-tailed)	.004	
	N	39	39

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

There is a moderate relationship between pay for performance and employee performance improvement in the sample that have two years of experience.

A2- 47 Hypothesis 06 for two years of experience

Correlations

		Performance	Personal_Development
Performance	Pearson Correlation	1	.559**
	Sig. (2-tailed)		.000
	N	39	39
Personal_Development	Pearson Correlation	.559**	1
	Sig. (2-tailed)	.000	
	N	39	39

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

There is a moderate relationship between personal development opportunities and employee performance improvement in the sample that have two years of experience.

A2- 48 Hypothesis 07_I for two years of experience

Correlations

		Performance	Appraisal_Interview	Satisfaction
Performance	Pearson Correlation	1	.415**	.707**
	Sig. (2-tailed)		.009	.000
	N	39	39	39
Appraisal_Interview	Pearson Correlation	.415**	1	.516**
	Sig. (2-tailed)	.009		.001
	N	39	39	39
Satisfaction	Pearson Correlation	.707**	.516**	1
	Sig. (2-tailed)	.000	.001	
	N	39	39	39

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

There is a moderate correlation between appraisal interview and employee satisfaction. The value is 0.516. Satisfaction and performance also have a strong correlation and the value is 0.707. Appraisal interview and performance also have a moderate relationship. So satisfaction acts as a moderately mediator factor between pay for

performance and performance improvement in the category of the employees who have two years of experience.

A2- 49 Hypothesis 07_II for two years of experience

Correlations

		Performance	Satisfaction	Pay_for_Performance
Performance	Pearson Correlation	1	.707**	.452**
	Sig. (2-tailed)		.000	.004
	N	39	39	39
Satisfaction	Pearson Correlation	.707**	1	.619**
	Sig. (2-tailed)	.000		.000
	N	39	39	39
Pay_for_Performance	Pearson Correlation	.452**	.619**	1
	Sig. (2-tailed)	.004	.000	
	N	39	39	39

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

There is a strong correlation between pay for performance and employee satisfaction. The value is 0.619. Satisfaction and performance also have a strong correlation and the value is 0.707. Pay for performance and performance also have a moderate relationship. So satisfaction acts as a moderately mediator factor between pay for performance and performance improvement in the category of the employees who have two years of experience.

3 to 5 years

A2- 50 Hypothesis 01 for three to five years of experience

Correlations

		Goal_Setting	Performance
Goal_Setting	Pearson Correlation	1	.549**
	Sig. (2-tailed)		.000
	N	107	107
Performance	Pearson Correlation	.549**	1
	Sig. (2-tailed)	.000	
	N	107	107

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

There is a moderate relationship between goal setting and employee performance improvement in the sample that have three to five years of experience.

A2- 51 Hypothesis 02 for three to five years of experience

Correlations

		Performance	Self_Evaluation
Performance	Pearson Correlation	1	.279**
	Sig. (2-tailed)		.004
	N	107	107
Self_Evaluation	Pearson Correlation	.279**	1
	Sig. (2-tailed)	.004	
	N	107	107

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

There is a weak relationship between self-evaluation and employee performance improvement in the sample that have three to five years of experience.

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A2- 52 Hypothesis 03 for three to five years of experience

Correlations

		Performance	Participation
Performance	Pearson Correlation	1	.291**
	Sig. (2-tailed)		.002
	N	107	107
Participation	Pearson Correlation	.291**	1
	Sig. (2-tailed)	.002	
	N	107	107

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

There is a weak relationship between participation for the appraisal process and employee performance improvement in the sample that have three to five years of experience.

A2- 53 Hypothesis 04 for three to five years of experience

Correlations

		Performance	Appraisal_Interview
Performance	Pearson Correlation	1	.440**
	Sig. (2-tailed)		.000
	N	107	107
Appraisal_Interview	Pearson Correlation	.440**	1
	Sig. (2-tailed)	.000	
	N	107	107

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

There is a moderate relationship between appraisal interview and employee performance improvement in the sample that have three to five years of experience.

A2- 54 Hypothesis 05 for three to five years of experience

Correlations

		Performance	Pay_for_Performance
Performance	Pearson Correlation	1	.445**
	Sig. (2-tailed)		.000
	N	107	107
Pay_for_Performance	Pearson Correlation	.445**	1
	Sig. (2-tailed)	.000	
	N	107	107

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

There is a moderate relationship between pay for performance and employee performance improvement in the sample that have three to five years of experience.

A2- 55 Hypothesis 06 for three to five years of experience

Correlations

		Performance	Personal_Development
Performance	Pearson Correlation	1	.572**
	Sig. (2-tailed)		.000
	N	107	107
Personal_Development	Pearson Correlation	.572**	1
	Sig. (2-tailed)	.000	
	N	107	107

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

There is a moderate relationship between personal development opportunities and employee performance improvement in the sample that have three to five years of experience.

A2- 56 Hypothesis 07_I for three to five years of experience

Correlations

		Performance	Satisfaction	Appraisal_Interview
Performance	Pearson Correlation	1	.660**	.440**
	Sig. (2-tailed)		.000	.000
	N	107	107	107
Satisfaction	Pearson Correlation	.660**	1	.584**
	Sig. (2-tailed)	.000		.000
	N	107	107	107
Appraisal_Interview	Pearson Correlation	.440**	.584**	1
	Sig. (2-tailed)	.000	.000	
	N	107	107	107

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

There is a moderate correlation between appraisal interview and employee satisfaction. The value is 0.584. Satisfaction and performance also have a strong correlation and the value is 0.660. Appraisal interview and performance also have a moderate relationship. So satisfaction acts as a moderately mediator factor between appraisal interview and performance improvement in the category of the employees who have three to five years of experience.

A2- 57 Hypothesis 07_II for three to five years of experience

Correlations

		Performance	Satisfaction	Pay_for_Performance
Performance	Pearson Correlation	1	.660**	.445**
	Sig. (2-tailed)		.000	.000
	N	107	107	107
Satisfaction	Pearson Correlation	.660**	1	.667**
	Sig. (2-tailed)	.000		.000
	N	107	107	107
Pay_for_Performance	Pearson Correlation	.445**	.667**	1
	Sig. (2-tailed)	.000	.000	
	N	107	107	107

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

There is a strong correlation between pay for performance and employee satisfaction. The value is 0.667. Satisfaction and performance also have a strong correlation and the value is 0.660. Pay for performance and performance also have a moderate relationship. So satisfaction acts as a moderately mediator factor between pay for performance and performance improvement in the category of the employees who have three to five years of experience.

More than Five

A2- 58 Hypothesis 01 for more than five years of experience

Correlations

		Goal_Setting	Performance
Goal_Setting	Pearson Correlation	1	.369**
	Sig. (2-tailed)		.006
	N	54	54
Performance	Pearson Correlation	.369**	1
	Sig. (2-tailed)	.006	
	N	54	54

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

There is a moderate relationship between goal setting and employee performance improvement in the sample that have more than five years of experience.

A2- 59 Hypothesis 02 for more than five years of experience

Correlations

		Performance	Self_Evaluation
Performance	Pearson Correlation	1	.138
	Sig. (2-tailed)		.321
	N	54	54
Self_Evaluation	Pearson Correlation	.138	1
	Sig. (2-tailed)	.321	
	N	54	54

There is no relationship between self-evaluation and employee performance improvement in the sample that have more than five years of experience.

A2- 60 Hypothesis 03 for more than five years of experience

Correlations

		Performance	Participation
Performance	Pearson Correlation	1	.163
	Sig. (2-tailed)		.240
	N	54	54
Participation	Pearson Correlation	.163	1
	Sig. (2-tailed)	.240	
	N	54	54

There is no relationship between participation for the appraisal process and employee performance improvement in the sample that have more than five years of experience.

A2- 61 Hypothesis 04 for more than five years of experience

Correlations

		Performance	Appraisal_Interview
Performance	Pearson Correlation	1	.214
	Sig. (2-tailed)		.121
	N	54	54
Appraisal_Interview	Pearson Correlation	.214	1
	Sig. (2-tailed)	.121	
	N	54	54

There is no relationship between appraisal interview and employee performance improvement in the sample that have more than five years of experience.

A2- 62 Hypothesis 05 for more than five years of experience

Correlations

		Performance	Pay_for_Performance
Performance	Pearson Correlation	1	.140
	Sig. (2-tailed)		.312
	N	54	54
Pay_for_Performance	Pearson Correlation	.140	1
	Sig. (2-tailed)	.312	
	N	54	54

There is no relationship between pay for performance and employee performance improvement in the sample that have more than five years of experience.

A2- 63 Hypothesis 06 for more than five years of experience

Correlations

		Performance	Personal_Development
Performance	Pearson Correlation	1	.020
	Sig. (2-tailed)		.888
	N	54	54
Personal_Development	Pearson Correlation	.020	1
	Sig. (2-tailed)	.888	
	N	54	54

There is no relationship between personal development opportunities and employee performance improvement in the sample that have more than five years of experience.

A2- 64 Hypothesis 07_I for more than five years of experience

Correlations

		Performance	Appraisal_Interview	Satisfaction
Performance	Pearson Correlation	1	.214	.262
	Sig. (2-tailed)		.121	.056
	N	54	54	54
Appraisal_Interview	Pearson Correlation	.214	1	.707**
	Sig. (2-tailed)	.121		.000
	N	54	54	54
Satisfaction	Pearson Correlation	.262	.707**	1
	Sig. (2-tailed)	.056	.000	
	N	54	54	54

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

There is a strong correlation between appraisal interview and employee satisfaction. The value is 0.707. Satisfaction and performance have no correlation. Appraisal interview and performance also have no relationship. So satisfaction does not act as a mediator factor between appraisal interview and performance improvement in the category of the employees who have more than five years of experience.

A2- 65 Hypothesis 07_II for more than five years of experience

Correlations

		Performance	Satisfaction	Pay_for_Performance
Performance	Pearson Correlation	1	.262	.140
	Sig. (2-tailed)		.056	.312
	N	54	54	54
Satisfaction	Pearson Correlation	.262	1	.500**
	Sig. (2-tailed)	.056		.000
	N	54	54	54
Pay_for_Performance	Pearson Correlation	.140	.500**	1
	Sig. (2-tailed)	.312	.000	
	N	54	54	54

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

There is a moderate correlation between pay for performance and employee satisfaction. The value is 0.500. Satisfaction and performance have no strong correlation. Pay for performance and performance also have no relationship. So satisfaction does not act as a mediator factor between appraisal interview and performance improvement in the category of the employees who have more than five years of experience.

Type of the Organization

Product Based

A2- 66 Hypothesis 01 for product based organizations

Correlations

		Goal_Setting	Performance
Goal_Setting	Pearson Correlation	1	.423**
	Sig. (2-tailed)		.000
	N	77	77
Performance	Pearson Correlation	.423**	1
	Sig. (2-tailed)	.000	
	N	77	77

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

There is a moderate relationship between goal setting and employee performance improvement in the sample of employees who work for product based organizations.

A2- 67 Hypothesis 02 for product based organizations

Correlations

		Performance	Self_Evaluation
Performance	Pearson Correlation	1	.346**
	Sig. (2-tailed)		.002
	N	77	77
Self_Evaluation	Pearson Correlation	.346**	1
	Sig. (2-tailed)	.002	
	N	77	77

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

There is a moderate relationship between self-evaluation and employee performance improvement in the sample of employees who work for product based organizations.

A2- 68 Hypothesis 03 for product based organizations

Correlations

		Performance	Participation
Performance	Pearson Correlation	1	.305**
	Sig. (2-tailed)		.007
	N	77	77
Participation	Pearson Correlation	.305**	1
	Sig. (2-tailed)	.007	
	N	77	77

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

There is a moderate relationship between participation for the appraisal process and employee performance improvement in the sample of employees who work for product based organizations.

A2- 69 Hypothesis 04 for product based organizations

Correlations

		Performance	Appraisal_Interview
Performance	Pearson Correlation	1	.413**
	Sig. (2-tailed)		.000
	N	77	77
Appraisal_Interview	Pearson Correlation	.413**	1
	Sig. (2-tailed)	.000	
	N	77	77

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

There is a moderate relationship between appraisal interview and employee performance improvement in the sample of employees who work for product based organizations.

A2- 70 Hypothesis 05 for product based organizations

Correlations

		Performance	Pay_for_Performance
Performance	Pearson Correlation	1	.377**
	Sig. (2-tailed)		.001
	N	77	77
Pay_for_Performance	Pearson Correlation	.377**	1
	Sig. (2-tailed)	.001	
	N	77	77

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

There is a moderate relationship between pay for performance and employee performance improvement in the sample of employees who work for product based organizations.

A2- 71 Hypothesis 06 for product based organizations

Correlations

		Performance	Personal_Development
Performance	Pearson Correlation	1	.553**
	Sig. (2-tailed)		.000
	N	77	77
Personal_Development	Pearson Correlation	.553**	1
	Sig. (2-tailed)	.000	
	N	77	77

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

There is a moderate relationship between personal development opportunities and employee performance improvement in the sample of employees who work for product based organizations.

A2- 72 Hypothesis 07_I for product based organizations

Correlations

		Performance	Satisfaction	Appraisal_Interview
Performance	Pearson Correlation	1	.656**	.413**
	Sig. (2-tailed)		.000	.000
	N	77	77	77
Satisfaction	Pearson Correlation	.656**	1	.444**
	Sig. (2-tailed)	.000		.000
	N	77	77	77
Appraisal_Interview	Pearson Correlation	.413**	.444**	1
	Sig. (2-tailed)	.000	.000	
	N	77	77	77

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

There is a moderate correlation between appraisal interview and employee satisfaction. The value is 0.444. Satisfaction and performance have a strong correlation. The value is 0.656. Appraisal interview and performance also have a moderate relationship. So satisfaction acts as a mediator factor between appraisal interview and performance improvement in the category of the employees who work for product based organizations.

A2- 73 Hypothesis 07_II for product based organizations

Correlations

		Performance	Satisfaction	Pay_for_Performance
Performance	Pearson Correlation	1	.656**	.377**
	Sig. (2-tailed)		.000	.001
	N	77	77	77
Satisfaction	Pearson Correlation	.656**	1	.497**
	Sig. (2-tailed)	.000		.000
	N	77	77	77
Pay_for_Performance	Pearson Correlation	.377**	.497**	1
	Sig. (2-tailed)	.001	.000	
	N	77	77	77

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

There is a moderate correlation between pay for performance and employee satisfaction. The value is 0.497. Satisfaction and performance have a strong correlation. The value is 0.656. Pay for performance and performance also have moderate relationship. So satisfaction acts as a mediator factor between pay for performance and performance improvement in the category of the employees who work for product based organizations.

Service Based

A2- 74 Hypothesis 01 for service based organizations

Correlations

		Goal_Setting	Performance
Goal_Setting	Pearson Correlation	1	.467**
	Sig. (2-tailed)		.001
	N	51	51
Performance	Pearson Correlation	.467**	1
	Sig. (2-tailed)	.001	
	N	51	51

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

There is a moderate relationship between goal setting and employee performance improvement in the sample of employees who work for service based organizations.

A2- 75 Hypothesis 02 for service based organizations

Correlations

		Performance	Self_Evaluation
Performance	Pearson Correlation	1	.393**
	Sig. (2-tailed)		.004
	N	51	51
Self_Evaluation	Pearson Correlation	.393**	1
	Sig. (2-tailed)	.004	
	N	51	51

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

There is a moderate relationship between self-evaluation and employee performance improvement in the sample of employees who work for service based organizations.

A2- 76 Hypothesis 03 for service based organizations

Correlations

		Performance	Participation
Performance	Pearson Correlation	1	.288*
	Sig. (2-tailed)		.041
	N	51	51
Participation	Pearson Correlation	.288*	1
	Sig. (2-tailed)	.041	
	N	51	51

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

There is a weak relationship between participation for the appraisal process and employee performance improvement in the sample of employees who work for service based organizations.

A2- 77 Hypothesis 04 for service based organizations

Correlations

		Performance	Appraisal_Interview
Performance	Pearson Correlation	1	.555**
	Sig. (2-tailed)		.000
	N	51	51
Appraisal_Interview	Pearson Correlation	.555**	1
	Sig. (2-tailed)	.000	
	N	51	51

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

There is a moderate relationship between appraisal interview and employee performance improvement in the sample of employees who work for service based organizations.

A2- 78 Hypothesis 05 for service based organizations

Correlations

		Performance	Pay_for_Performance
Performance	Pearson Correlation	1	.551**
	Sig. (2-tailed)		.000
	N	51	51
Pay_for_Performance	Pearson Correlation	.551**	1
	Sig. (2-tailed)	.000	
	N	51	51

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

There is a moderate relationship between pay for performance and employee performance improvement in the sample of employees who work for service based organizations.

A2- 79 Hypothesis 06 for service based organizations

Correlations

		Performance	Personal_Development
Performance	Pearson Correlation	1	.546**
	Sig. (2-tailed)		.000
	N	51	51
Personal_Development	Pearson Correlation	.546**	1
	Sig. (2-tailed)	.000	
	N	51	51

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

There is a moderate relationship between personal development opportunities and employee performance improvement in the sample of employees who work for service based organizations.

A2- 80 Hypothesis 07_I for service based organizations

Correlations

		Performance	Appraisal_Interview	Satisfaction
Performance	Pearson Correlation	1	.555**	.739**
	Sig. (2-tailed)		.000	.000
	N	51	51	51
Appraisal_Interview	Pearson Correlation	.555**	1	.772**
	Sig. (2-tailed)	.000		.000
	N	51	51	51
Satisfaction	Pearson Correlation	.739**	.772**	1
	Sig. (2-tailed)	.000	.000	
	N	51	51	51

There is a strong correlation between appraisal interview and employee satisfaction. The value is 0.772. Satisfaction and performance have a strong correlation. The value is 0.739. Appraisal interview and performance also have moderate relationship. So satisfaction acts as a moderately mediator factor between appraisal interview and performance improvement in the category of the employees who work for service based organizations.

A2- 81 Hypothesis 07_II for service based organizations

Correlations

		Performance	Satisfaction	Pay_for_Performance
Performance	Pearson Correlation	1	.739**	.551**
	Sig. (2-tailed)		.000	.000
	N	51	51	51
Satisfaction	Pearson Correlation	.739**	1	.647**
	Sig. (2-tailed)	.000		.000
	N	51	51	51
Pay_for_Performance	Pearson Correlation	.551**	.647**	1
	Sig. (2-tailed)	.000	.000	
	N	51	51	51

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

There is a strong correlation between pay for performance and employee satisfaction. The value is 0.647. Satisfaction and performance have a strong correlation. The value is 0.739. Pay for performance and performance also have moderate relationship. So satisfaction acts as a moderately mediator factor between pay for performance and performance improvement in the category of the employees who work for product based organizations.

Both

A2- 82 Hypothesis 01 for both (mix) organizations

Correlations

		Goal_Setting	Performance
Goal_Setting	Pearson Correlation	1	.582**
	Sig. (2-tailed)		.000
	N	93	93
Performance	Pearson Correlation	.582**	1
	Sig. (2-tailed)	.000	
	N	93	93

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

There is a moderate relationship between goal setting and employee performance improvement in the sample of employees who work for both products based and service based organizations (Mix).

A2- 83 Hypothesis 02 for both (mix) organizations

Correlations

		Performance	Self_Evaluation
Performance	Pearson Correlation	1	.127
	Sig. (2-tailed)		.225
	N	93	93
Self_Evaluation	Pearson Correlation	.127	1
	Sig. (2-tailed)	.225	
	N	93	93

There is no relationship between self-eveluation and employee performance improvement in the sample of employees who work for both products based and service based organizations (Mix).

A2- 84 Hypothesis 03 for both (mix) organizations

Correlations

		Performance	Participation
Performance	Pearson Correlation	1	.254*
	Sig. (2-tailed)		.014
	N	93	93
Participation	Pearson Correlation	.254*	1
	Sig. (2-tailed)	.014	
	N	93	93

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

There is a weak relationship between participation for the appraisal process and employee performance improvement in the sample of employees who work for both products based and service based organizations (Mix).

A2- 85 Hypothesis 04 for both (mix) organizations

Correlations

		Performance	Appraisal_Interview
Performance	Pearson Correlation	1	.317**
	Sig. (2-tailed)		.002
	N	93	93
Appraisal_Interview	Pearson Correlation	.317**	1
	Sig. (2-tailed)	.002	
	N	93	93

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

There is a moderate relationship between appraisal interview and employee performance improvement in the sample of employees who work for both products based and service based organizations (Mix).

A2- 86 Hypothesis 05 for both (mix) organizations

Correlations

		Performance	Pay_for_Performance
Performance	Pearson Correlation	1	.409**
	Sig. (2-tailed)		.000
	N	93	93
Pay_for_Performance	Pearson Correlation	.409**	1
	Sig. (2-tailed)	.000	
	N	93	93

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

There is a moderate relationship between pay for performance and employee performance improvement in the sample of employees who work for both products based and service based organizations (Mix).

A2- 87 Hypothesis 06 for both (mix) organizations

Correlations

		Performance	Personal_Development
Performance	Pearson Correlation	1	.302**
	Sig. (2-tailed)		.003
	N	93	93
Personal_Development	Pearson Correlation	.302**	1
	Sig. (2-tailed)	.003	
	N	93	93

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

There is a moderate relationship between personal development and employee performance improvement in the sample of employees who work for both products based and service based organizations (Mix).

A2- 88 Hypothesis 07_I for both (mix) organizations

Correlations

		Performance	Satisfaction	Appraisal_Interview
Performance	Pearson Correlation	1	.539**	.317**
	Sig. (2-tailed)		.000	.002
	N	93	93	93
Satisfaction	Pearson Correlation	.539**	1	.660**
	Sig. (2-tailed)	.000		.000
	N	93	93	93
Appraisal_Interview	Pearson Correlation	.317**	.660**	1
	Sig. (2-tailed)	.002	.000	
	N	93	93	93

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

There is a strong correlation between appraisal interview and employee satisfaction. The value is 0.660. Satisfaction and performance have a moderate correlation. The value is 0.539. Appraisal interview and performance also have moderate relationship. So satisfaction acts as a moderately mediator factor between appraisal interview and performance improvement in the category of the employees who work for both products based and service based organizations (Mix).

A2- 89 Hypothesis 07_II for both (mix) organizations

Correlations

		Performance	Satisfaction	Pay_for_Performance
Performance	Pearson Correlation	1	.539**	.409**
	Sig. (2-tailed)		.000	.000
	N	93	93	93
Satisfaction	Pearson Correlation	.539**	1	.731**
	Sig. (2-tailed)	.000		.000
	N	93	93	93
Pay_for_Performance	Pearson Correlation	.409**	.731**	1
	Sig. (2-tailed)	.000	.000	
	N	93	93	93

There is a strong correlation between pay for performance and employee satisfaction. The value is 0.731. Satisfaction and performance have a moderate correlation. The value is 0.539. Pay for performance and performance also have moderate relationship. So satisfaction acts as a moderately mediator factor between pay for performance and performance improvement in the category of the employees who work for both products based and service based organizations (Mix).

Summary of Demographic Analysis

A2.90 Summary of number of appraisal cycles.

	More than Ten (11)	Ten or Less (28)	Five or Less (127)	Two or Less (57)
Hypothesis 01	x	Weak (0.422)	Moderate (0.535)	Moderate (0.517)
Hypothesis 02	Strong (0.643)	x	Weak (0.235)	Weak (0.398)
Hypothesis 03	x	x	Weak (0.361)	Moderate (0.442)
Hypothesis 04	Strong (0.690)	x	Moderate (0.474)	Moderate (0.527)
Hypothesis 05	Strong (0.719)	x	Moderate (0.440)	Moderate (0.517)
Hypothesis 06	x	x	Moderate (0.534)	Moderate (0.500)
Hypothesis 07	Moderate	x	Moderate	Moderate

A2.91 Summary of industry experience.

Years of experience	More than Five years (54)	3-5 years (107)	Two years (39)	Less than Two Years (23)
Hypothesis 01	Moderate (0.369)	Moderate (0.549)	Strong (0.613)	Moderate (0.428)
Hypothesis 02	x	Weak (0.279)	x	x
Hypothesis 03	x	Weak (0.291)	Weak (0.366)	x
Hypothesis 04	x	Moderate (0.440)	Moderate (0.415)	Moderate (0.461)
Hypothesis 05	x	Moderate (0.445)	Moderate (0.452)	Strong (0.825)
Hypothesis 06	x	Moderate (0.572)	Moderate (0.559)	Weak (0.375)
Hypothesis 07	x	Moderate	Moderate	Moderate

A2.92 Summary of organization type.

Type of the Organization	Product Based (77)	Service Based (51)	Both (93)
Hypothesis 01	Moderate (0.423)	Moderate (0.467)	Moderate (0.582)
Hypothesis 02	Moderate (0.346)	Moderate (0.393)	x
Hypothesis 03	Moderate (0.305)	Weak (0.298)	Weak (0.254)
Hypothesis 04	Moderate (0.413)	Moderate (0.555)	Moderate (0.317)
Hypothesis 05	Moderate (0.377)	Moderate (0.551)	Moderate (0.409)
Hypothesis 06	Moderate (0.553)	Moderate (0.546)	Moderate (0.302)
Hypothesis 07	Moderate	Moderate	Moderate