

Comprehensive Analysis of Performance Appraisal Systems with Productivity

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Abstract: With the help of this study, both the personnel and the organisation can improve their performance. To identify the performance appraisal of employees in their occupations, which is influenced by a variety of elements, including incentives, working conditions, subordinate relationships, reward systems, job security, and welfare facilities, the primary goals of the study are to determine the performance appraisal from the perspective of the employees. People working for the organization have certain expectations regarding these situation aspects. This descriptive research is used to design a scheduled questionnaire to collect data from the employees, and the collected data are analyzed and tested for validity and reliability. The statistical tool is used to study the significance, and the sample size selected was 105 employees from that particular company. To locate the employee's performance evaluation system to their work organization. The opinions of workers and the degree to which they are satisfied with their jobs are good places to look for them. In addition, the company took various measures to boost the mood of its workforce by implementing several tactics, which were detailed in the company's prospectus.

Keywords: Scheduled Questionnaire; Performance Appraisal System; Line Manager; Annual Performance; Highly Interactive Processes; Developing Assessment Tools; Writing Job Descriptions.

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1. Introduction

A systematic method, performance appraisal, deals with determining employees' job performance and future development ability with the help of Padhaya et al. [1]. It is considerably important for any organizational management process because it will be a tool that can allow employing the tool regarding a rewarding human resource, identification of strengths, weakness,

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and strength of development at the same place as done in Lohman [2]. This procedure clarifies each employee's role and responsibilities. In return, this empowers them to handle their limitations, boosting their performance. Indeed, Sulkowski et al. [3] argue in studies to the same point. Line managers mainly assess individuals. At the same time, the CEO assesses directors, and the latter, in turn, is assessed by either the chairman or the owners, depending on the system and size of the organization, as noted by Al-Jedaia and Mehrez [4]. These performance appraisals are shared with the employees, increasing transparency and decreasing mistrust. They can develop the basis for constructive feedback and, therefore, the collective improvement applied in systems implemented by Na-Nan et al. [5]. The study of Mahmoud et al. [6] further emphasized that the different designs of appraisal systems are intended to fit organizational needs, their jobs, and their workforce because these should constantly be relevant and effective. Annual appraisals are very effective for setting standards, defining expectations, assigning tasks, and identifying individual and organizational training needs, as is evident in the methodologies by Petasis et al. [7]. Thus, they are highly instrumental in ensuring that the employees' objectives are aligned with organizational goals, motivating staff, and creating a cordial relationship between management and employees, as stated by Burić and Moè [8].

Ampong and Abrokwa [9] have analyzed the interactive approach of the performance appraisal process wherein the employees' management, at all levels, contribute. This consists of job expectations, detailed design of a job description, and identification of A group effort, ensures objectivity and all-inclusiveness and eliminates bias, writes [11]. Importantly, appraisals must be governed by equality and fairness to prevent discrimination based on age, gender, race, religion, and disability, governed by policies from Simmons et al. [12]. Therefore, performance appraisal contributes to an equitable environment that would help build diversity and inclusiveness in the workplace, as supported by Türk [13]. The scope of performance appraisal has gone beyond evaluating performance, according to findings by Armstrong [14]. It serves as the basis for organizational development as it identifies the strengths and weaknesses of an employee and acts upon them by enhancing the former and diminishing the latter through specific training; it also encourages employees to improve their productivity, as asserted by Camilleri and Camilleri [15]. According to Shrestha and Chalidabhongse [16], performance appraisals help employees know clearly what to expect from their jobs to enhance their job satisfaction and positively contribute to their personal growth. They form the basis of maintaining proper records about compensation packages and promotions, among other HR decisions, as shown in Silaban and Margaretha [17]. This streamlined system ensures that employees are rewarded justly, hence resulting in a feeling of trust and loyalty within the organization, as illustrated in Gopinath [18].

Performance appraisal needs to be relevant for several reasons, as highlighted in studies by Kondrasuk [19]. They also give a structured framework in which key decisions on pay raises, transfers, promotions, demotions, and even termination ought to be based on the works of Wright and Snell [20]. They also serve as a source of coaching and counseling for the employees to set their career goals in line with the organizational goals proposed by Guruprasad et al. [21]. The evaluation of the employee's performance is not only judgmental but developmental, as reported by Eichel and Bender [22]. The performance is realistically assessed, and the outcome is documented. Then, in one-on-one meetings, it is discussed among managers. As Taylor and Baines rightly said, these help staff set ambitious future goals [23]. In appraisals, facilitative feedback explains the people's strengths, builds their confidence, and discovers areas for improvement. Through this, improvement can be very effective, according to the methodologies by Hamza and Kumar [24]. This ensures that performance standards continue to improve and yield better results year after year, as exemplified by Sabarirajan et al. [25]. This way, performance appraisal is more than just a tool to measure but a catalyst for growth, innovation, and excellence in the workplace.

1.1. Objectives of Performance Appraisal Primary Objective:

To study employee's performance concerning their jobs and their potential for development.

1.2. Secondary Objective

- To assess the training and development requirements of employees.
- To understand the workplace and environment of the organization.
- To know HR policies and practices followed by the organization.

To study the present performance appraisal system and to suggest a better one if required.

2. Literature Review

Performance appraisal is essential for achieving organizational goals to harmonize with human resource practices, ensure efficiency, and motivate the workforce toward involvement in the fast-paced and competitive environment, as applied by Sulkowski et al. [3]. The performance appraisal systems evolve, indicating a growing awareness of their potential to impact an organization's success through aligning the individual's performance with the ultimate strategic goals, as used by Simmons et al. [12]. It is very hard to select the best PA method since it is achieved based on balancing various factors while involving experts' opinions and evidence-based criteria, as indicated in Kondrasuk [19]. Different decision-analytic approaches combined with others, such as Shannon's entropy, have been applied to develop the best-suited PA methods, for example, [5]. These

approaches are implemented to compare the elements of an organization using ranking systems such as TOPSIS. The methodologies are selected based on the respective requirements of the companies through such approaches, as discussed in Sabarirajan et al. [25]. The 360-degree feedback system has been most widely utilized to show how appraisal techniques may fully include various types of input from supervisors, peers, customers, and even the employees themselves for securing comprehensive appraisals that propel employee development and organizational effectiveness, as mentioned in Shrestha and Chalidabhongse [16].

Designing and implementing performance appraisal systems deals with strong models that stress motivation, evaluation, and results management, core pillars as discussed by Burić and Moè [8]. These models identify key linkages between employee effort, outcomes, and assessments in a feedback loop that sustains continuous improvement, according to Wright and Snell [20]. The appraisal systems of organizations assist them in establishing actionable goals for the employees within an accountable and fair culture, according to Petasis et al. [7]. Appraisal systems can, therefore, be integrated into motivational frameworks so that performance, both at an individual and group level, can be achieved. For instance, expectancy models have been framed to make individual aspirations into organizational expectations. Hence, enhanced work engagement and production are found within the frameworks put forward by Al-Jedaia and Mehrez [4].

This diversity in appraisal methods, from traditional ranking up to modern approaches such as MBO, shows that they are adaptable to different organizational contexts, as mentioned by Lohman [2]. While some methods will emphasize structured criteria and objective measurement, others have focused on qualitative insights and employee development, as presented by Ampong and Abrokwa [9]. While each technique will offer different advantages and disadvantages to influence appropriateness, depending on organizational size, industry, or goals, factors such as those determining the suitability of the Graphic Rating Scale Balanced Scorecard (BARS) are Guruprasad et al., [21]. This comparative analysis shows that no methodology is inherently superior and universally appropriate as it relates to an organization's appropriateness, given its characteristics and needs in a particular setting determines the relative effectiveness of an approach, underlined by Mahmoud et al. [6]. For instance, 360-degree or 720-degree appraisals need to be used by an organization that has hierarchies in a relevant way and distributed for different jobs so that there may be a general overview of how the employee's contribution has performed, according to Eichel and Bender [22].

Performance appraisal is not restricted to individual performance measurement but is aimed at stimulating and developing careers, according to Silaban and Margaretha [17]. Such effective appraisal systems facilitate a collaborative relationship between the employees and the supervisors that can help the employee identify areas of strength and weakness and guide his/her personal and professional development, as in Camilleri and Camilleri [15]. It provides constructive feedback with actionable recommendations from performance appraisals for the employee's clear understanding of the role, enhancing job satisfaction, as seen in Hutaibat et al. [10]. These systems also help identify training and development needs. This will help organizations to build a competent workforce, as shown by Padhaya et al. [1]. Appraisals also form the basis of significant human resources decisions such as promotion, salary changes, and even workforce planning; this ensures equity in rewards and opportunities, as practised by Hamza and Kumar [24]. Many believe that the induction of technology in the performance appraisal process has enhanced its efficiency with instant feedback and streamlined procedures, as cited in Gopinath [18]. High-end software applications and analytics help organizations continuously track and review performance parameters with minimal usages of subjective judgment, as indicated by Türk [13]. The Analytic Hierarchy Process and Multi-Factorial Evaluation Models brought better precise and reliable performance in appraisal since they check employees for more dimensions, including qualities such as working quality, collaboration, and initiative, as found in Armstrong [14]. The reliability brought about by performance appraisals also made it possible to help organizations rely on data-driven decision-making- the main way to grow organizations in a highly competitive market environment, according to Taylor and Baines [23].

Though well-supported performance appraisal systems have been an issue and a problem in design and implementation terms, such as what has been studied in Kondrasuk [19], for instance, it is very challenging to meet the Total Quality Management and the traditional assessments since there are two conflicting trends: one advocating process improvement and customer satisfaction at the expense of performance appraisal focusing on individual responsibility and actions, as concluded by Mahmoud et al., [6] and also as advocated in Al-Jedaia and Mehrez [4]. These must be surmounted through integrated approaches that orient appraisal tools in line with other quality management objectives, such as Petasis et al. [7]. There has to be a measure of justice and, in more detail, non-discrimination, as elaborated in Wright and Snell [20]. The organization has to have clear, fair, and integrated systems with no bias towards discriminating factors by gender, race, age, etc., as in Ampong and Abrokwa [9]. Deeper into the dimensions, performance appraisals are related to organizational strategies, employee engagements, and longevity success, as in Sabarirajan et al. [25]. This system creates a culture for continuous feedback development, which ensures continuous performance ownership with aligned employee efforts, as stated by a report by Haslam et al. [11]. The alignment enhances an individual's efficiency and the organization's robustness as a whole, as stated by Sulkowski et al. [3]. Moreover, performance appraisal systems have become windows that link organizational policies with employee expectations; they are bound to accomplish objectives obtained by Simmons et al. [12].

One of the essential requirements for management in modern-day organizations is the performance appraisal system, which, as declared, provides a standardized methodology for reviewing and developing human assets performance [22]. This instrument's strategic importance underlines the rationale for linking human resource practices to organizational goals as conceptualized by Na-Nan et al. [5]. By using more traditional approaches or innovative, creative designs, performance appraisal systems can aid an organization in building an effective, functional, and committed workforce, as outlined by Silaban and Margaretha [17]. According to Shrestha and Chalidabhongse [16], research proved that due to challenges, technology, and inclusivity, organizations can perform their appraisal systems best, thus increasing growth and success in a dynamic business environment.

3. Research Methodology

Research is a scientific method of discovering unknown truths or undiscovered knowledge. Researchers, by logical and systematic steps, study problems so that they may have a structured approach. The techniques adopted to complete a project constitute the Research Methodology.

3.1. Research Design

A research design is a structured plan for conducting a study, including:

- A clear statement of the research problem.
- Techniques and procedures for data collection.
- The population to be studied.
- Methods for processing and analyzing data.

This study uses a descriptive research design, describing the nature of the group, community, or population under investigation. Rich observation studies comprise largely of research most attuned to understanding attitudes, behaviors, and demographics. Other studies also come with some level of prediction, even some degree of narration as regards the facts and characterization of the facts about the subject, an individual, or even a situation.

3.2. Method of Sampling

Sample Design: Sample design refers to the preceding plan that would be followed for choosing items or participants from the population. In this study, a sample size of 105 has been chosen.

Data Collection: The data for this research depends mainly on primary data. There has been a minimal reliance on secondary sources.

Primary Data: It is collected using structured questionnaires.

Secondary Data: Extracted from files maintained in personnel departments, company brochures, magazines, and journals.

Analytical Tools

Percentage Analysis: Percentage analysis evaluates responses by calculating the proportion of respondents from the total sample size. It is calculated as:

$$\% = \left(\frac{\text{Number of Respondents}}{\text{Total Respondents}} \right) \times 100$$

Chi-Square Test: This test determines the association between two opinions or evaluates the effectiveness of preferences. It is a non-parametric test used in hypothesis testing and is expressed as:

$$\chi^2 = \sum \left(\frac{(O_i - E_i)^2}{E_i} \right)$$

Where:

O_i = Observed Value

E_i = Expected Value

Hypotheses

Null Hypothesis (H_0) : No significant difference exists.
 Alternate Hypothesis (H_1) : A significant difference exists.

Performance appraisal has become a part of organizational management to align objectives, improve personnel selection and training systems, prevent wrongful terminations, and enhance employee diversity. A good review process enhances organizational performance and individual development by assessing past achievements, confronting challenges, and setting future objectives [26]. A good appraisal process involves preparing relevant materials, clear objectives, communication, and choosing a suitable venue; a structured review and feedback sessions follow this. As agreed, an action plan completes the process with all support necessary for objective achievement, raising additional points, and the final positive closure through follow-ups and documentation [27]. Through performance appraisals, organizations improve the communication of objectives, foster cohesiveness, develop effective leadership, and engender loyalty [28]. For appraisers, it provides information on specific jobs, clarifies expectations, and helps build productive working relationships. For appraisees, appraisals enhance motivation, provide role clarity, and facilitate opportunities for career development and overcoming weaknesses with guidance [29]-[34].

There are traditional and modern appraisal methods available for different organizational needs. Traditional appraisal methods include ranking, paired comparisons, grading, graphic scales, checklists, essays, and critical incident techniques, which provide structured approaches for evaluating performance [35]. For example, ranking ranks the subordinates on a merit scale, while paired comparisons rank the employees based on their relative position against others through defined criteria. The modern methods include BARS (Behaviorally Anchored Rating Scales), human resource accounting, assessment centres, MBO (Management by Objectives), and 360° feedback [36]. BARS is a technique that combines graphic scales with critical incidents to evaluate job-related behaviors. Human resource accounting treats the employee as an organizational asset by comparing the costs with contributions. The assessment centre evaluates readiness for more demanding roles through real-life scenarios and simulations [37]-[42].

MBO is dependent on mutual goal setting, with an emphasis on results rather than on methods. The 360° feedback system takes feedback from the superior, peers, subordinates, and customers to provide a well-rounded feedback system. Such a multi-source appraisal is entirely in keeping with an organization's modern objectives, emphasizing teamwork, continuous learning, and personal growth. E-appraisal systems improve the process by going electronic and integrating. Eliminating paperwork, custom forms, and central access to appraisal data helps. Automated alerts, competency-based appraisals, and up-to-date changes make e-appraisals efficient and user-friendly. Benefits include speedy processing, secured data storage, and easy stakeholder accessibility [43]-[47]. Whether it is traditional, modern, or electronic use, performance appraisal is significant in making the organization more efficient, growing employees, and aligning the efforts of the individual with more strategic goals. By integrating different appraisal techniques and taking advantage of technological advancement, organizations can develop a holistic framework for continuous improvement and success [48].

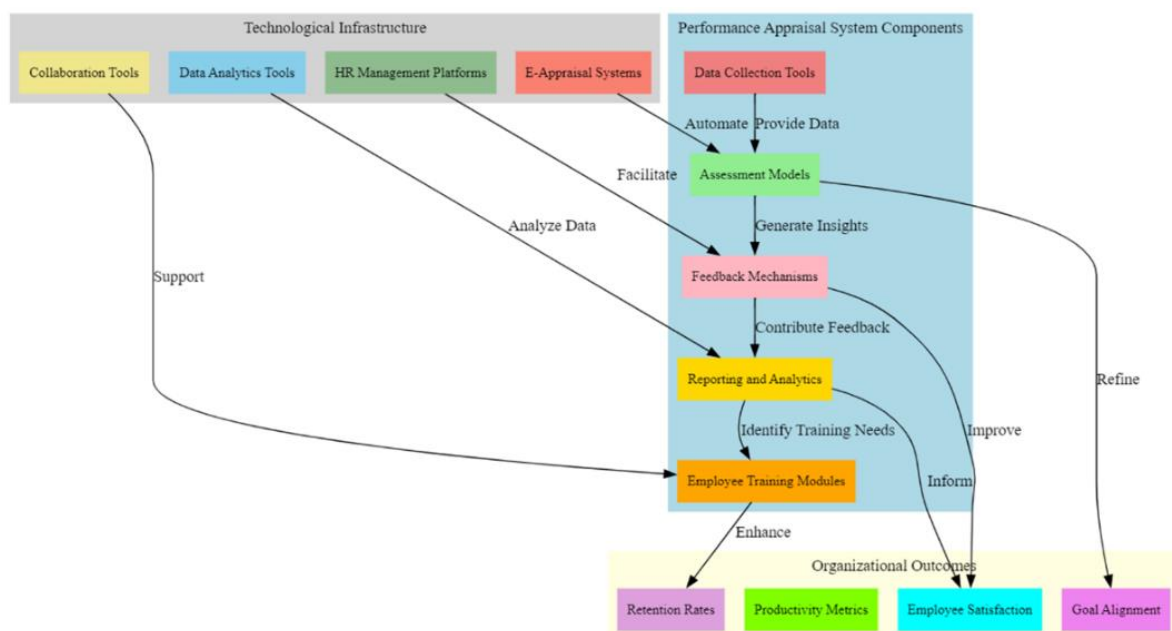


Figure 1: Integrated framework for evaluating performance appraisal systems and enhancing organizational outcomes

Figure 1 is divided into three major subgroups: elements of the Performance Appraisal System, Organisational Outcomes, and Technological infrastructure. It essentially entails the core of this cluster - that is, the system's core elements: the appraisal tools are data collection systems, appraisal models and techniques, forms or methods used for giving instant feedback, schemes for reporting with analytics, and diverse training modules, used together in practice because, essentially, such aggregated data, as well as analysis, are fed into giving actionable feedback and some insight into those training and development initiatives [49]. The second group deals with organizational outcomes, including employee satisfaction, productive metrics, goal alignment, and retention rates [50]. This reflects the true impacts of a credible appraisal system that improves workplace dynamics and employee engagement. The third cluster is the technological underpinning of the appraisal system [51]. Third are categories that include e-appraisal systems, HR management platforms, data analytics tools, and collaboration tools that facilitate improvement of the process and accuracy and automate real-time access to the data, reducing interdependencies on the components, results, and infrastructure [52]-[55]. The linkages at nodes can present data in movement through feedback, and the reporting tool will outline which route a plan for a train will be through when the needs of the employee are met [56]-[58]. Modern technology devices easily integrate HR's data analysis software and other platforms. This will be an integrated process that showcases how performance appraisal, through the support of high technology, will improve the assessment of employees whose individual efforts are compatible with the organization's larger goals. Such employees will remain productive, motivated, satisfied, and effective.

4. Results

Data analysis and interpretation are, therefore, very critical to bridge the gap between raw data and evidence to be influential in formulating and implementing an intervention. It acts as the gap filler between data collection and actionable insights, so this element should not be missed in any research or evaluation process. Data analysis aims to extract useful information that will guide decision-making, hence creating more understanding of the issues involved. Regardless of the nature of data, whether qualitative or quantitative, it plays various roles, which include describing and summarizing the collected information, providing explanations concerning relationships between variables, pinpointing patterns or trends, and comparing variables to outline key differences. It can further predict outcomes with the help of existing data that gives vital foresight to planning and strategy.

The interpretation phase requires fair and careful judgments to ensure accurate and unbiased conclusions. That would, therefore, call for an open mind when approaching the process, and that evidence should be allowed to lead to conclusions and not fit the data into a preconceived notion. Qualitative data could be interpreted as thematic analysis, finding stories or insights, while quantitative data used statistical techniques for hypotheses testing or correlation measures. Such diversity in interpretation brings out the essence of context and methodological prudence. Only a well-considered process of analysis and interpretation can ensure that data is understood and used well, and it is then possible to modify interventions, validate the outcomes, and thus produce meaningful change.

The Employee Satisfaction Score (ESS) aggregates satisfaction levels across various performance metrics while accounting for their respective importance and given as

$$ESS = \frac{\sum_{i=1}^n (W_i \cdot S_i)}{\sum_{i=1}^n W_i} \quad (1)$$

Here, W_i represents the weight of each metric and S_i is the satisfaction score for metric i . Workplace Productivity (WP) is calculated as the ratio of total output to total input, reflecting operational efficiency

$$WP = \frac{\text{Total Output}(O)}{\text{Total Input}(I)} \quad (2)$$

This measure serves as a key indicator of organizational performance. The Performance Appraisal Effectiveness Index (PAEI) determines the average effectiveness of appraisal factors.

$$PAEI = \frac{\sum_{j=1}^m B_j}{m} \quad (3)$$

Here, B_j denotes the effectiveness score of the j factor, and m is the total number of factors considered. The Correlation Coefficient (r) quantifies the relationship between employee satisfaction and workplace productivity

$$r = \frac{\sum_{i=1}^n (X_i - \bar{X})(Y_i - \bar{Y})}{\sqrt{\sum_{i=1}^n (X_i - \bar{X})^2 \sum_{i=1}^n (Y_i - \bar{Y})^2}} \quad (4)$$

Where X and y represent employee satisfaction and productivity, respectively. The Job Satisfaction Index (JSI) models job satisfaction as a weighted combination of satisfaction, motivation, and team dynamics

$$JSI = \alpha_1 \cdot BSS + \alpha_2 \cdot MS + \alpha_3 TS \quad (5)$$

Here, $\alpha_1, \alpha_2, \alpha_3$ are coefficient $\cdot d$ the importance of each component. The Appraisal Impact Factor (AIF) measures the change in workplace productivity relative to the change $\mid \cap$ employee satisfaction

$$AIF = \frac{\Delta WP}{\Delta ESS} \quad (6)$$

This highlights how improvements in satisfaction translated into productivity gains. The Employee Retention Probability (ERP) models the likelihood of retaining employees based on their satisfaction score

$$ERP = 1 - e^{-\lambda_{1S}} \quad (7)$$

Here, λ_{1S} a scaling constant that reflects the sensitivity of retention to satisfaction. The Weighted Productivity Gain (WPG) aggregates productivity gain from various factors, weighted by importance.

$$WPG = \sum_{k=1}^p (P_k W_k) \quad (8)$$

Where P_k represents the productivity gain from factor k , and W_k is corresponding weight. The Performance Appraisal Satisfaction Equation (PASE) evaluates overall satisfaction with the system by averaging weighted ratings across multiple appraisal metrics.

$$PASE = \frac{\sum_{j=1}^q (A_l \cdot R_l)}{\sum_{j=1}^q A_l} \quad (9)$$

Here, A_l is the weight assigned to the l^{th} appraisal metric, and R_l is its rating.

The working processes of an organization must be understood so that its efficiency and areas for improvement can be evaluated. Such can be done through research and data collection to analyze the processes. In this light, a research study analyses and examines the performance appraisal process's efficiency and effectiveness. Every organization designs and conducts its performance appraisal process uniquely to improve employee performance and align with organizational objectives. A performance appraisal process must be very minutely and effectively implemented to achieve successful outcomes. This research, thus, looks into employees at different levels, assessing their satisfaction and reactions to the existing performance appraisal process.

The data collection is done using questionnaires, which record their opinions and experiences regarding the implementation of this process. The major data analysis objectives are to evaluate the quality of information collected for better relevant and accurate information. This includes assessing the impact and the value of the current performance appraisal process, gathering deeper insights for potential improvements, and providing action suggestions where necessary. The analysis further attempts to outline employees' specific responses and reactions to better understand the perspectives of revealing areas that require attention. When these objectives are fulfilled, research not only evaluates the effectiveness of performance appraisal systems but also refines the implementation, which would improve employee satisfaction and organizational success.

Table 1: The age group of the respondents

S.No	Age Group	No of Respondents	Percentage
1	25-35years	38	36.5%
2	35-45years	26	25%
3	45-55years	25	24%
4	Above 55years	16	14.45%
Total		105	100%

Table 1 shows the age group of the respondents, which further helps to represent the demographics of the selected population. There were 105 samples, with a maximum of respondents from 25-35 years old, found to be 36.5%. Thus, this would leave an inference to the researcher to conclude that a pretty good amount of young professionals or an early career person. The age group is between 35 and 45 years. Respondents included 26 in the total count of 25%, forming the mid-career professionals in great numbers. The second consecutive group includes people aged 45 to 55, making up 24%. There are 25 respondents in this category. It reflects a well-experienced professional near retirement age. The smallest group is the above 55 years, which returns 16 respondents, accounting for 14.45% of the total, thus highlighting a lower representation of individuals in the senior-most category. This age distribution would provide a comprehensive view of the workforce at different stages of careers. It would allow an analysis of how perceptions, preferences, and feedback might vary in different age groups. This is to balance the

representation of these segments and ensure that the research conclusions reflect experiences and views related to professional issues and generation that will further form a comprehensive study of the matter under study. Most respondents (36.5%) are between the age group of 25-35 years. 25% of respondents are 35-45 years old., 24% are 45-55 years old, and the lowest of 14.45% of respondents are above 55 years old (Table 2).

Table 2: Gender Classification of the Respondents

S.No	Gender	No of Respondents	Percentage
1	Male	80	76.2%
2	Female	25	23.8%
Total		105	100%

Most respondents are male (80%), and only 20% are females. Table 3 shows a wide variation of academic background for the respondents. Out of the 105 respondents, the biggest number is those holding diploma qualifications, making up 41 respondents or 38.5% of the total. This is significant as most of the workforce have technical or vocational education. This is quite significant in the population covered. The largest proportion is the graduates. Of the 38 people, the graduates are 36.5% of the total respondents. This means that a majority percent of the population is graduates. There will be an equal and balanced technical and formal education distribution in this regard. The postgraduates comprise the third largest population covered at 23, or 22.1%. This indicates that more than one-fifth of the sample population has had higher education, which is likely to enhance the skill and knowledge set of the group.

Table 3: Educational Qualification of The Respondents

S.No.	Qualification	Count off Qualification	Percentage
1	Diploma	41	38.5%
2	Graduate	38	36.5%
3	Postgraduate	23	22.1%
4	Illiterate	3	2.95
Total		105	100%

A tiny segment is only three individuals (2.95%) of the illiterates, representing a minimum number of representatives lacking any form of basic formal education in the surveyed population. Such diversification in the distribution of educational qualifications unravels mixed and diverse mix levels that may influence perceptions, skills, and contributions in the organizational or social context. This balanced representation across different levels of diplomas, graduate school, and postgraduate school ensures that the insights derived from the study could be considered inclusive of various educational backgrounds. However, the small illiterate group provides a contrast that may give unique perspectives to this study. The majority of respondents (41) are diplomas. There are 38 graduates, 23 postgraduates, and the lowest of 3 illiterates.

Most of the respondents, 43 individuals or 41%, strongly agree that the training is helpful, which means that the respondents have acknowledged the positive impact of training programs on developing skills and performance. In addition, 34 respondents, or 32.4%, agree that training is helpful, strengthening the overall perception that training is highly relevant to their work. Together, these three groups account for 73.4% of the respondents and convey a very high level of support for the training programs undertaken by the organization. A very small minority, 15 respondents or 14.3%, take a neutral position, neither agreeing nor disagreeing that training has value. This is because it is likely that the conflict of the training programs was minor.

On the other hand, 10 respondents, comprising 9.5%, agree that training is not productive, and an astonishing three respondents (2.8%) strongly disagree, meaning that only a small percentage have opposing views. These can also indicate the people who lack relevance and outcome from the pieces of training conducted. In general, results indicate that most consider training an important tool for individual and professional growth. Still, it has to be improved to meet the needs and expectations of all employees. In this regard, feedback can give the organization a chance to effect changes in how it approaches training by enhancing participation, satisfaction, and effectiveness. Most 43 respondents strongly agree that training helps individual and organizational development. Fifteen respondents are neutral. Ten respondents disagree with the statement, and the lowest of the 3 respondent strongly disagree.

The majority of 40% of respondents suggest that lack of role clarity is the main cause of performance appraisal failure at their organization. 21.9% prefer lack of communication as their choice, and 17.1% prefer interval of appraisal as their main cause of appraisal failure. 12.4% suggest errors and biased evaluation as their primary. The lowest, 7.6%, prefers none of the above.

4.1. Statistical Analysis

The Chi-square test is the statistical tool that determines whether there is an association between two variables or opinions. It measures the effectiveness of preferences or opinions. As a non-parametric test, researchers use it widely in these areas, mostly in marketing, to test hypotheses. Simply put, the chi-square test counts the difference between data observed (OO) and data expected in all categories, wherein the difference is squared over the expected one. The expression gives its mathematical representation:

$$\chi^2 = \sum [(O_i - E_i)^2 / E_i]$$

O_i = Observed Value

E_i = Expected Value

Null hypothesis (H₀): There is no significant difference

Alternate hypothesis (H₁): There is a significant difference

Expected frequency = Row Total * Column Total / Grand Total

H₀ – There is no significance between gender and opinion on promotion based on performance appraisal.

H₁- There is significance between gender and opinion on promotion based on performance appraisal.

Table 4: Observed Value

O	E	O-E	(O-E) ²	(O-E) ² /E
25	27.42	-2.42	5.8564	0.2135
13	22.09	-9.09	82.6281	3.7405
12	12.19	-0.19	0.0361	0.0029
05	10.66	-5.66	32.0356	3.0052
25	07.61	17.39	302.4121	39.7387
0	08.57	-8.57	73.4449	8.5700
02	06.90	-4.90	24.0100	3.4797
12	03.80	8.20	67.2400	17.6947
18	03.33	14.67	215.2089	64.6272
03	02.38	0.62	0.3844	0.1615
				141.2339

The F-test is a statistical test used in hypothesis testing to check whether the variances of two populations or two samples are equal (Table 4). In an f test, the data follows an f distribution. This test uses the f statistic to compare two variances by dividing them. The F-test is used to compare two population variances.

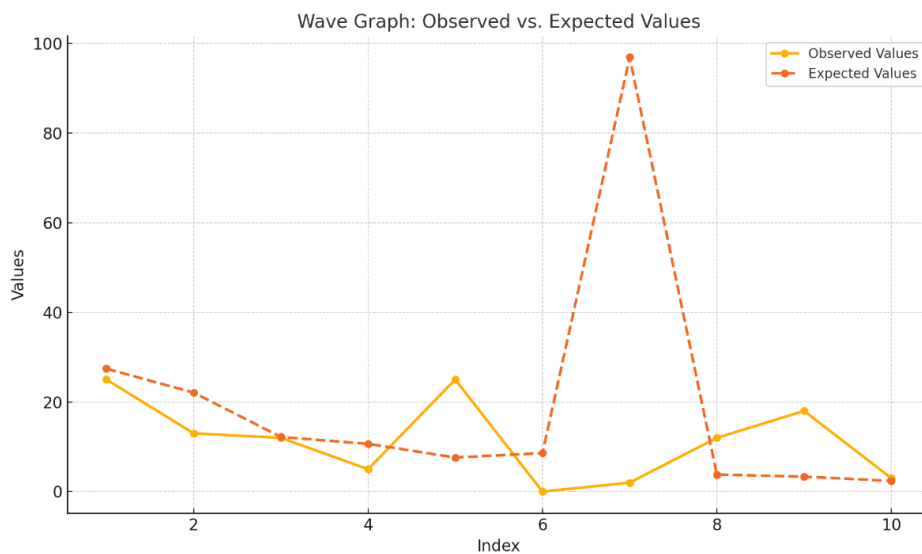


Figure 2: Observed Vs. Expected Values

Figure 2 illustrates the relationship between observed and expected values across ten data points. Each index represents a specific category or scenario in the dataset, plotting the observed values alongside their corresponding expected values. The observed values (solid line) show noticeable deviations from the expected values (dashed line) at multiple points, particularly around indices 5 and 8. These deviations indicate where the actual outcomes significantly differ from the predicted values. For example, at index 5, the observed value is considerably higher than expected, reflecting an unexpected increase. Conversely, at index 6, the observed value is far below the expected, indicating a sharp discrepancy.

The current trends suggest that while some indices maintain relative consistency between observed and expected values, others demonstrate substantial divergence. This may point to underlying factors or anomalies affecting the outcomes in those specific scenarios. These variations highlight areas where further investigation is necessary to understand the causes of such disparities. Figure 2 emphasizes the importance of continuous evaluation and adjustment in models predicting expected values. The periodic fluctuations and alignment in the graph provide valuable insights for analyzing the model's accuracy and identifying trends that can guide decision-making or corrective actions. Such analyses are crucial for improving the reliability of predictions and minimizing unexpected deviations in future iterations.

5. Discussions and Findings

Discussion of results I. Results of the respondent's perception of the performance appraisal system, methods of training, career opportunities, and general satisfaction with wages and incentives The demographic data revealed that the sample was almost fairly well distributed; that is, most of the respondents who participated were metropolitan residents at 36.2%, followed by respondents from urban areas at 33.3% and others from rural areas at 30.5%. The distribution ensures proper representation of varied socio-economic backgrounds, which is one of the main requirements for considering the effectiveness of an organizational process. From the range analysis of the salary, it can be found that 32% of respondents lie in the range of 15,000 to 25,000 INR, and the next 24.3% lie in the range of 25,000 to 35,000 INR, indicating a mid-level earning working population. However, with a low percentage of individuals above 35,000 INR, only around 20.45% feel low incomers. It might affect their view of the appraisal system.

Age stage as per experience levels by the respondents depicted most people (36.2%) to have lesser experience levels of five years, indicating that the organization has a rather young workforce. In this respect, a similar percentage never had experience (22.9%) or more than 10 years (21.9%), which affords different views from entry-level, mid-career, and experienced employees. This diversity underlines the need for tailoring performance appraisal and training methods for the different groups of employees. Training remains a significant theme that will be useful in performance improvement. Most practised "on-the-job" training at 46.2%, while "both on and off the job" training was 43.3%. This further shows a preference for learning by doing, in which skills are practically developed at work. The basis of an argument also incorporates the suitability of the training method. Step-by-step instructions scored at the top with 31.4%, followed closely by coaching/lectures, which scored 32.4%, indicating that training may have some connotation for following some set design.

Respondents believe that knowledge has improved top in the lead, at 35.6%, while improvement of the skill is second at the highest number: 29.8%. Notably, 22.1% of respondents report changes in attitudes. This might help with holistically implying well-designed training. 41% of the respondents strongly agreed that the training influences them positively, 32.4% agreed on the same factor, and all these show a general success in training interventions, but 14.3% are neutral, and 12.3% disagreed, meaning some employees may have the feeling that the training program is not at all relevant to their job or needs. This feedback indicates that the training programs need to be devised according to the various expectations of the workforce.

The second critical area is career growth and opportunities. In this regard, 39.4% strongly agree, and 36.5% agree that the organization provides enough avenues for advancement. This implies that performance appraisals and training programs align with employee career expectations. However, a small portion is neutral (13.5%) or disagrees (10.6%), indicating that not all employees feel adequate support for their career advancement. Enhanced mentorship, leadership development programs, and well-defined growth pathways may improve the perception of career opportunities to help eliminate these concerns. One of the most remarkable findings is wage satisfaction. Very non-agreeable responses stand in the rank with 35.2%. Almost an equal portion, with 35.2%, affirms wages, salary, and incentive satisfaction. The stark difference of thoughts is well projected and stands out when someone is perceived as being paid a justified amount or otherwise. These three factors -role, experience, and performance- are considered while gauging influences. In case it is neutral thinking, 16.2 % of people belong. The rest are in full agreement or disagreement at the rate of 6.7%. The compensation package must be fair, more transparent, and anchored toward the employee's performance relative to that based on their expectation.

General Appraisal System. General feedback on the performance appraisal system is that it is well-structured, but its delivery at multiple points holds some scope for improvement. Generally, appraisals are considered a tool to obtain constructive

feedback and develop growth areas. However, most respondents raise very fair and effective concerns regarding the system, meaning there must be consistency and transparency in the appraisal process. It may improve its value if appraisals are related to training and career development. Overall, the study's findings suggest that the organization's performance appraisal system and the training programs enhance employee performance and job satisfaction; however, there is a gap to be addressed. These include training programs targeted at the employees' specific needs, performance appraisal being just and transparent, and wage dissatisfaction. These will help the organization improve its human resource practices and, consequently, an engaged, motivated, and productive workforce. Such improvements would benefit the employees and align with achieving broader organizational objectives in a positive and cohesive work environment.

6. Conclusion

Overall, the research reveals that employees are very satisfied with their jobs. Still, at the same time, the organization lacks certain factors, such as career growth and employee bonuses. If these factors are given more care, the organization can maintain good workers with high satisfaction among the employees with organizational commitment and involvement. It will unveil numerous crucial findings on employee demographics, training, performance appraisal, and work satisfaction. About age, 36.5% of respondents are between the ages of 25-35 years, 76.2% are males, and 38.5% have completed their diplomas. Metropolis accounted for 36.2%, while 32% fall within a salary bracket of ₹15,000 to ₹25,000, and 36.2% of respondents have experience for less than five years. Training is one area of focus where 46.2% of the respondents wanted to be trained on the job, and 32.4% wanted coaching as a means of training. 35.6% believe that knowledge is what is being gained out of training. Additionally, 41% believe it benefits the individual and the organization. The career development opportunity was recognized by 39.4%, while 41.9% said they strongly agreed with the proposition that appraisals help them. Forty percent like their organization's management style, but only 28.2% feel the customers are satisfied with their output. Job security motivates 44.8 percent, and 32.7 percent believe their work culture is very supportive. 35.9 percent affirm the company's goals are clearly stated, while 32.4 percent rate management style as very good. However, dissatisfaction with salary and incentives lies in the fact that 35.2% strongly disagree that they are satisfactory. A high 34.3% are aware of the attendance policy; a satisfying 38.1% agree that grievance handling is satisfactory; collaborative behaviour is desirable for 36.5%, and 41.9% are fairly rewarded. While 37.1% think the appraisal system is good, 40% feel it fails in its role clarity aspect. Therefore, the result reflects the need to resolve issues about compensation, clear roles, appraisals, and work environments to enhance overall satisfaction and productivity.

6.1. Limitations

This process is integral to performance appraisal but not a limitation-free endeavor. One probable drawback of such an appraisal method is appraiser bias. Favored employees are rated high, while those who are not so favored score low to others. Ambiguity in standards cannot be inconsistent because supervisors are already applying different criteria for one employee compared to another, thus threatening the evaluation's merit fairness. This also lacks sufficient evidence, whereby employees who would have succeeded in impressing their managers will be given a good rating even though they are failing in the groups they are operating in, making the whole process a mere show process. Further, most employee's characteristics remain neglected because most performance evaluations focus narrowly on the most limited character, and performance measures cannot substantiate individual differences in background values and conduct. Another limit is leniency/sternness tendency -the style of each reviewer for some individual judgment will interfere with ratings. This refers to "positive leniency error," an error that characterizes over-generosity in judging, or "negative leniency error," an error that gives ratings that show a tendency of over-stringiness in judging. Finally, the influence of job status can distort appraisal since highly paid or senior people are rated based on their statuses rather than what they have been doing. Therefore, standardized and objective appraisal systems should bring fairness and effectiveness to appraisals.

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