

COLLEGE OF BUSINESS AND ECONOMCIS

SCHOOL OF COMMERCE

The Effect of Human Resource Management Practices on Project Success: The Case of Ethiopian Engineering Corporation, Addis Ababa

By Eyerusalem Alemayehu

A THESIS SUMBITTED TO THE SCHOOL OF GRADUATE STUDIES, ADDIS ABABA UNIVERSITY IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR AWARD OF MA DEGREE IN HUMAN RESOURCE MANAGEMENT

Advisor: Solomon Markos, Ph.D

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Declaration

I, Eyerusalem Alemayehu, the under signed, declare that this Thesis entitled: “The Effect of Human Resource Management Practice on Project Success: The case of Ethiopian Engineering Corporation (EEC)” is my original work. All the information and ideas presented in this thesis are the result of my own research and has not been submitted for any degree in any other university.

Name: Eyerusalem Alemayehu Signature: _____ Date: _____

Statement of certification

This is to certify that this thesis work entitled: The Effect Of Human Resource Management Practices on Project Success : The case of Ethiopian Engineering Corporation submitted in partial fulfilment of the requirements for the degree of Masters of Human Resource Management of the post graduate studies, Addis Ababa University School of Commerce and is record of original research carried out by Eyerusalem Alemayehu ID.No-GSE/6118/16, under my supervision, and no part of the project work has been submitted for any other degree or diploma. The assistance and help received during the course of this investigation have been duly acknowledged; Therefore, I recommend it to be accepted as fulfilling the thesis work requirements.

_____	_____	_____
Name of Advisor	**signature**	**Date**

ADDIS ABABA UNIVERSITY

COLLEGE OF BUSINESS AND ECONOMCIS

SCHOOL OF COMMERCE

DEPARTMENT OF HUMAN RESOURCE MANAGEMENT

The Effect of Human Resource Management Practices on Project Success: The Case of Ethiopian Engineering Corporation

A Thesis submitted to Addis Ababa University, School of Commerce in partial fulfillment of the requirements for the degree of master's in Human Resource Management (HRM)

By Eyerusalem Alemayehu

APPROVED BY BOARD OF EXAMINERS

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Abbreviation and Acronyms

ANOVA Analysis of Variance

EEC Ethiopian Engineering Corporation

HR Human Resource

HRM Human Resource Management

HRMP Human Resource Management Practice

MS Mean Score

PMI Project Management Institute

SD Standard Deviation

SPSS Statistical Package for the Social Science

VIF Variance Inflation Factors

Abstract

This research explored how Human Resource Management (HRM) affected the success of projects at Ethiopian Engineering Corporation. The study sought to identify the key HRM aspects that affect the success of projects, including recruitment and selection, training and development, performance appraisal, rewards and compensation, and health and safety practices. The research adopted quantitative research methodology with an explanatory research design. Primary data was collected by distributing structured questionnaires to employees who have project work experience in the last five years. In all, 100 respondents participated in the research. Statistical Package for Social Sciences (SPSS) version 23 was used for the analysis of data collected. This involved descriptive statistics, correlation, ANOVA, and multiple regressions. The results showed that employees held positive views about the HRM and Health, safety and environmental (HSE) practices employed in the organization. According to descriptive analysis, high means were obtained for all HRM practices and for the project success indicators. It was observed through correlation analysis that performance appraisal, compensation and rewards, and HSE practices have very strong and significant correlations with the success of projects. Out of all variables mentioned above, it was observed that HSE practices had the highest correlation with project success. Furthermore, through regression analysis it was found that compensation and reward and HSE practices have significant positive effects on project success whereas recruitment and selection, training and development, and performance appraisal did not have significant effects on project success. ANOVA revealed that the regression model was statistically significant. It explained 73.1 percent of the variance of project success. From the findings, there is no doubt that an efficient HRM and HSE system is instrumental in enhancing project efficiency within the company. In view of this, the study suggests that the organization should focus on building a robust reward system for its employees, improve workplace safety measures, and refine its HRM processes.

Key words-Human Resource Management (HRM), Project Success, Recruitment and Selection, Rewards and Compensation, Health, Safety and Environment (HSE).

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

Human Resource Management (HRM) refers to an integrated and strategic approach to managing people in order to meet the goal of an organization. In essence, HRM refers to managing people effectively by making sure that human resource practices are strategically aligned to the strategy of the organization so as productivity and efficiency are increased. According to Armstrong (2014), HRM can be defined as a way of managing people so as to build commitment, competence, and motivation.

Project success is traditionally measured in terms of completing projects within the required time, cost, and quality standards. Recent studies also consider stakeholder satisfaction, safety performance, and organizational objectives as dimensions of project success. Since project outcomes largely depend on the performance of project teams, effective HRM practices play a critical role in achieving successful project delivery.

In relation to project organization, Human Resource Management (HRM) becomes a major factor in guaranteeing the successful completion of projects, mainly through assisting in hiring the right staff with the right skill, enhancing their abilities, and motivating employees to be more productive by using their highest effort. Armstrong (2014) defines HRM as comprising activities that include recruiting & selecting employees, giving training and developing them, managing performance while providing suitable rewards for good performance. Thus, by carrying out these functions effectively, organizations are able to improve the performance of individuals and teams, which in turn helps meet project objectives mainly regarding time, cost, quality and scope.

Furthermore, HRM supports project success by fostering a supportive work environment that enhances employee engagement and well-being. Armstrong (2014) argues that a well-managed workforce is more likely to demonstrate higher levels of commitment and productivity, thereby positively influencing organizational and project outcomes. In this study, HRM is therefore considered a fundamental driver of employee performance, which in turn mediates the relationship between HRM practices and project success.

PMBOK emphasizes that effective management of human resources contributes directly to project success by enhancing team performance, collaboration, and productivity. PMI (2017) explains that key activities such as planning resource management, acquiring project team members, developing the team, and managing team performance are essential for meeting project objectives related to scope, time, cost, and quality. These activities strongly influence employee performance by improving competencies, motivation, and coordination among project team members.

HRM practices exert considerable impacts on projects because they directly affect success in project-based businesses like construction projects. Effective HRM is an essential strategy in making sure that the right people are recruited, properly trained, evaluated and motivated towards realizing the objectives of the projects. The major activities like recruitment & selection, training & development, appraising and motivating, maintaining the health & safety of employees contribute towards increasing competence, commitment and productivity of employees which are crucial in determining project performance. Research studies prove that performance appraisal and job satisfaction levels of employees contribute significantly in increasing employee accountability and engagement with organizational objectives. The reward system will make them more committed. However, the contribution of training and development depends on the extent to which they fit in general workforce planning.Overall, organizations that implement structured and effective HRM practices are more likely to achieve timely completion, cost efficiency, quality standards, and stakeholder satisfaction, demonstrating a strong positive relationship between HRM practices and project success (Iqbal & Inayat, 2022).

Human Resource Management (HRM) activities are instrumental in ensuring project success, which is stressed in the Project Management Body of Knowledge known as a guide to the PMBOK®. The PMBOK stresses that proper project resource management, which includes the acquisition, development, and management of the project team, is imperative towards project success. Good HRM activities, which include defining roles, competency-based recruitment, development of the project team, assessing performance, and motivating the team, contribute towards high-performance levels among the project team members and teamwork within the team. This ensures efficient operations and reduce conflicts. It also ensures greater consistency with project objective. A well-managed project team leads to successful delivery of the project in scope, time, cost, and quality terms (PMI,2021).

The importance of HRM Practices cannot be ignored as they play an important role in determining the success of the project. The guide to the Project Management Body of Knowledge (PMBOK ®) published by the project management institute mentions the significance of effective project resource management and specifically emphasizes on building, developing, and managing project team members. Strategic recruiting practices in HRM help select the right set of professionals with appropriate competencies while training and development practices help hone their technical and non-technical skills required to execute the project successfully. In addition, the practice of performance management helps align the efforts of individuals with the overall goals of the project while reward practices help motivate, engage, and retain professionals. As per research by Guest, David E. (1997), HRM practices have a positive impact on organizational performance through enhanced employee commitment and flexibility. Research conducted in project management literature reveals that effective leadership, collaboration, and communications in project management are important predictors of successful projects and these are some of the core outcomes of the HRM process. Therefore, integrating robust HRM practices into project management frameworks not only strengthens team performance but also increases the likelihood of delivering projects successfully in terms of time, cost, quality, and stakeholder satisfaction.

PMBOK's resource management principles support the argument that structured HRM practices within projects enhance employee performance, which in turn mediates the relationship between HRM practices and project success. Effective project HRM enables organizations to maximize human capital contribution, reduce conflicts, and improve overall project outcomes (PMI, 2017).

In Ethiopia, the construction sector has experienced significant growth over the past two decades due to increasing investments in infrastructure, transportation, energy, and public building projects. Despite this growth, many construction projects continue to face challenges such as delays, cost overruns, quality issues, and safety concerns. Researchers and practitioners have increasingly recognized that weaknesses in human resource management practices contribute to these project performance problems.

Ethiopian Engineering Corporation (EEC) is one of the major public construction organizations involved in the execution of large-scale infrastructure and building projects across the country. Given the labor-intensive nature of construction projects, the effectiveness of HRM practices within EEC is expected to significantly influence project outcomes. Therefore, examining the

effect of HRM practices on project success in EEC is important for improving project performance and organizational effectiveness.

Although HRM practices are widely recognized as critical determinants of project success, limited empirical evidence exists regarding their influence on project success within Ethiopian construction organizations, particularly in EEC. This study therefore investigates the effect of recruitment and selection, training and development, performance appraisal, compensation and reward, and health and safety practices on project success in EEC.

1.2 Background of the Company

EEC is a multidisciplinary engineering firm that provides professional services in construction, water and energy, transport, building, and urban planning.

EEC-Construction business unit key activities are high-end complex construction projects, predominately high-rise commercial and residential buildings, real-estate; infrastructure (roads, railways and airports) & water and energy sector construction.

EEC-Construction is launched with the vision of being the best construction company in Ethiopia with a strategy of Timeously executing high-end complex projects, by utilizing proactive management skills as a Design and Build Contractor in order to achieve an optimum return and aspiring to be a competitive and preferred choice that can replace the current dependence on international contractors and deliver excellence. EEC Construction upholds Courage, Integrity, Reliability, Value for its People and Innovation as its core values.

Taking advantage of the existing EEC's strength and maximizing on the emerging external opportunities and aiming to play a significant role in the local construction industry by not only filling the gap in the current construction industry, but also replace the need for having international construction companies that are dominating government mega projects, EEC has recently established a Grade 1 construction contractor. The unit is a multi – disciplinary contractor that can undertake any type of construction projects, including irrigation, water supply, transport infrastructure, building and other civil construction project. (www.eec.com.et)

1.3 Problem statement

Despite the application of modern project management techniques and technological advancements, many construction projects continue to experience delays, cost overruns, quality defects, and safety issues. Studies indicate that a significant proportion of these

problems arise from human-related factors such as low labor productivity, inadequate skills, poor motivation, high employee turnover, and ineffective performance management.

In this study the relationship between effective human resource management practices and project success, and how these practices influence the overall success of projects will be addressed.

The main aim of the present research is to fill the gap identified in the construction industry. Although some researchers have tried to investigate the role played by HRM in influencing projects' success, they are inadequate – especially in relation to the significance of specific HRM functions involved in the management of the employee lifecycle. These functions include recruitment and selection, training and development, performance appraisal, and reward and recognition and also the health and safety practice.

In Ethiopia, managers of firms rarely pay close attention to HRM, which means that individuals who are not qualified or even semi-qualified may be recruited into projects. This problem results in high project failure rates, project delays, over-budgets, and talent retention/recruitment problems as well as a lack of alignment between projects and HR strategy.

Given the strategic role of EEC in implementing large-scale construction projects in Ethiopia, understanding how HRM practices influence project success is important for improving project performance and supporting evidence-based human resource decisions. Therefore, this study seeks to examine the effect of HRM practices on project success at Ethiopian Engineering Corporation.

1.5 Research Questions

To address the above problem, the following questions are formulated.

1. How is the process of acquiring project team members carried out at EEC?

2. In what ways is performance appraisal management implemented at EEC?

3. What training and development practices are applied within EEC’s projects?

4. What are the recognition and reward system practices on the projects at EEC?

5. what are the HSE practices on the projects at EEC?

1.4 Objective of the study

1.4.1 General objectives

The general objective of this study is to examine the effect of HRM practices on project success, considering employee performance as a mediator

1.4.2 Specific objectives

The specific objective of this study is achieved by addressing the following objectives specifically aiming to:

- To investigate the effect of recruitment and selection practices on project success at EEC.
- To evaluate the effect of performance appraisal practices and processes on project success at EEC.
- To examine the effect of training and development practices on project success at EEC.
- To assess the influences of recognition and reward practice on project success in EEC.
- To evaluate the effect of HSE practices on project success in EEC.

1.6 Significance of the study

This research investigated the relationship between human resource management practices in construction companies and project success, by focusing on the identification and development of the skills that lead to project success through efficient project delivery. The results can guide decision makers to find ways of enhancing the performance of their employees and managers when implementing their projects. The outcomes of the current study will help decision makers and project experts make better choices in terms of project skills and mindsets they should adopt in order to succeed.

1.7 Scope of the study

The scope of this study is limited to construction projects in EEC company. The study focuses on examining selected HRM practices and their effect on project success through employee performance. Data was collected from construction project participants such as project managers, site engineers, supervisors, and construction workers. The study is geographically limited to Addis Ababa and covers projects implemented within a defined time period i.e. from 2021 G.C to 2026 G.C which is after the construction wing in the corporation was formed.

This study is limited to the company's permanent employees as well as employees who have been serving for minimum of at least one year by focusing on the human management part of the project. It is also concerned with four variables which are The Project team recruitment and selection process, The project team performance appraisal, The project team training and development practices and the recognition and reward system practice.

1.8 Definition of Key Terms

To ensure clarity and alignment with the research objectives, the following conceptual and operational definitions are provided:

- **Human Resource Management:** Human Resource Management is a managerial function to recruit, select, train, and develop members for an organization. HRM is concerned with the people's dimensions in organizations (Armstrong M., 2010).
- **Project Human Resource Management:** Is the process of planning, acquiring, developing, and managing the project team to ensure that the project is staffed with the right people, with the right skills and competencies, at the right time. (PMI, 2017).
- **Human Resource Management Practices:** Are basically organization's actions which are responsible for administering human assets and make sure that assets are working to fulfilling organization's objective (Daud 2006).
- **Training and Development:** Is the formal and systematic modification of employee behavior through learning which occurs as a result of education, development and planned experience (Armstrong, 2009).
- **Project**: A temporary endeavor undertaken to create a unique product, service, or result (Armstrong M., 2010).
- **Project Management:** Project Management is the application of knowledge, skills, tools and techniques to project activities to meet project requirements (Armstrong M., 2010).
- **Project Team:** The people, including those from the functional departments, subcontractors, and vendors, who make up the set of skills and services required to complete a project (Armstrong M., 2010).
- **Project Success:** Effectively and efficiently achieving all project objectives in scope on time and within budget (Armstrong M., 2010).
- **Project Failure:** Not achieving all project objectives in scope, on time and within budget in an effective and efficient manner (Armstrong M., 2010).

CHAPTER TWO

LITERATURE REVIEW

Introduction

This chapter reviews relevant theoretical and empirical literature related to human resource management (HRM) practices, employee performance, and construction project success. The chapter is organized into four main sections: theoretical review, conceptual review, empirical review, and identification of research gaps. The purpose of this chapter is to establish a theoretical foundation for the study and to justify the proposed conceptual framework.

2.1 Theoretical Review

2.1.1 Definition of a Project

(Kerzner H., 2009) defines a project as any collection of activities and tasks that have a specific goal to be accomplished within specific parameters, have defined start and end dates, have funding limits (if applicable), use both human and non-human resources (i.e., money, people, equipment), and are multifunctional (i.e., cross several functional lines). According to PMI (2013), a project is a short-term endeavor initiated to produce a special good, service, or outcome. According to Christine B. Tayntor (20 July 2010), a project is a separate, finite group of multiple activities aimed to fulfill a certain purpose. However, a project is defined by Robert K. Wysocki (2014) as a collection of unique, complex, and related tasks with a single goal or objective that must be finished in a specific order. According to PMI (2013), a project's transitory nature is proof that it has a distinct beginning and end. Temporary does not always mean that a project will be finished fast. It demonstrates the dedication and perseverance of the endeavor.

2.1.2 Definition of project management

Project management can be described as a comprehensive practice that helps organizations and individuals meet their objectives using certain resources and processes under specified limits. According to the Project Management Institute (PMI), Project Management refers to “the application of knowledge, skills, tools, and techniques to project activities to meet the project requirements” (PMI,2021). Building on this, project management entails a set of inter-related processes, including project initiation, planning, execution, monitoring, control, and closeout, which are utilized during the course of project management, from the project’s odea to its implementation. These processes entail managing certain key performance limits such as

scope, schedule, budget, quality, risk, and stakeholder's expectations among others, In addition to aligning projects with organization's strategy. As indicated in a guide to the Project Management Body of Knowledge (PMBOK® Guide), competent project management requires combining technical, managerial, and strategic competencies.

2.1.3 Project management and success

Project management success is a multifaceted concept that has undergone notable change overtime, especially in terms of organizational capabilities and human resource management (HRM) skills. According to the Project Management Institute, the initial editions of the Project Management Body of Knowledge Guide (Guide to the PMBOK® Guide) focused on describing success in project management from the standpoint of attaining predefined objectives while adhering to certain scope, schedule, budget, and quality requirements (PMI,2013, PMI,2017). On the other hand, newer approaches, as represented in the seventh edition of the PMBOK® Guide view success in project management not only from such an angle but also through lenses of stakeholder satisfaction, delivering value, and organizational strategy (PMI,2021). Against the backdrop of such considerations, HRM plays an important role since a project can be seen as a joint effort of individuals who require effective use if HRM to improve team capability, communication, and collaboration. Therefore, the success of project management can be understood not only as the efficient delivery of project outputs but also as the result of well-managed human resources that drive productivity, innovation, and stakeholder satisfaction, making HRM practices a key determinant of overall project success.

2.1.4 Project Success

Sauer (2008) highlights that project success extends beyond completing tasks on time, within budget, and according to scope, emphasizing a multidimensional perspective that includes product quality, stakeholder satisfaction, and alignment with organizational objectives. In the context of HRM, effective human resource practices such as employee training, performance management, and motivation play a critical role in achieving these broader success dimensions. By enhancing employee performance, HRM ensures that project deliverables not only meet technical requirements but also create value and satisfy stakeholders, thereby contributing to overall project success.

The term project success is usually used to describe the positive completion of a project, if the defined goals and requirements have been met within the set time frame, budget and in compliance with quality standards. Factors such as effective communication, teamwork and

the fulfillment of customer requirements play a decisive role. Project success is often measured in terms of overall performance and the added value for the stakeholders.

Success factors can be defined as all forms of knowledge, skills, traits, attitudes, values, or personal characteristics that distinguish good performance from excellence in any particular position. The human resource management practices that lead to success include guaranteeing employees' safety, applying selective recruitment of employees, creating self-managed and productive teams, offering employees performance-based pay, providing training, establishing a flat organizational structure, and having all necessary information available.

It is hard to imagine how the organization can work effectively in the absence of proper HRM practices. Not only does it serve the organizational needs, but it is also extremely important for project management. Historically, projects were perceived as technical systems rather than behavioral ones, which means that they did not take human resources into consideration. However, now, thanks to the PMI, it is officially stated that Human Resource Management (HRM) is one of the basic elements of project management as defined in the Project Management Body of Knowledge. The main performance indicator of projects within the project management context is project success.

Human resource management involves the composition of personnel, which includes the organizational chart, role definition, job description, and workload allocation. In the project, the leader must direct and manage the group by assessing their need for training, motivating team members, conflict resolution, performance assessment, and ensuring proper decision making.

Project management and its relevant efficacies have gained focus of research in the past decade or so, mainly because of their importance as rewarding organizational activities in contemporary organizations Kaulio, 2008. Since project management is a complex activity and concerns with the application of ideas, so accordingly "Project Management Body of Knowledge" (PMBOK) divides it into "42 processes" and "5 groups" as published by Project Management Institute (2008). Not surprisingly, a continuous quest is in progress by researchers around the globe to elaborate the concerned phenomena. Thus far, these researches have been least rewarding because in-spite of a lot of research on ingredients of project success (Judgev and Muller, 2005), the number of successful projects is alarmingly small (Flyvbjerg et al., 2009). The reason can be attributed to the fact that the basic constituents that institute the success of a project are flexible (Judgev and Muller, 2005) and cannot be numerated as

guidelines in a standard template. These constituents of project success can be based on external or internal environments of concerned organizations, however, obvious categorization amongst these factors can be recognized on two types of successes related to projects and they are project success and success of project management (Cooke-Davies,2002).

Project success is related to attainment of strategic targets through pertinent businesses thereby is relevant to products or services of the organizations, whereas the success of management is the attainment of targets related to budget, quality and relevant conventional methods for the control of the project (Müller and Turner, 2010). These two broad classifications of project success evidently have one thing in common that is the all-important dependency on Human Resource (HR) because the former facet of success draws its strength from the latter.

Furthermore, since "Employees Recruitment & Selection (ERS), Employees Training & Development (ETD), Employees Performance Appraisals (EPA), and Employees Compensation System (ECS)" along all other relevant issues involving any employee in an organization also clutch relation with project manager and his team so relevance of these HR practices with project success (PS) is obvious. Human resource management (HRM) practices are in vogue since decades and their effects in writing the success story of an organization was one of the favorite areas of researcher in past decade or so. Conclusions drawn from these researches generally consent that there is an affirmative connection of HR practices with an organizations' recital (Dyer and Reeves, 1995; Guest et al., 2000). Relevant literature clarifies HRM as a practical approach to ensure presence of a prescribed structure within the frame work of an organization for appropriate factors like recruitment & selection, training & development, performance appraisal, career planning system, employee's participation and compensation system (Masood, 2010). However, in-spite of popularity and importance there is no consented definition of HRM which can be universally quoted or accepted, mainly because of the variance in approach or focus of scholars as per their individual perspective.

Faster completion of project before time always remained a big issue to the executives of the projects, as it brings with many changes affecting the progress and success rate of the project. Emerging opportunities by the global competition and dealings with multinational firms motivates the project management in such a way to maintain its competitive position stable in the market in a profitable manner. As mentioned by Pinto and Slevin, (1988), each project comprised of various components, like starting and ending date, particular objectives, specific budget and a set of interrelated activities. Moreover, a blend of financial and non-financial,

physical and material resources is required for its completions. To remain competitive project needs to be completed before its deadline and thus many of its resources are also prevented from being wasted. This in time successful completion also increases return on investment and adds value to shareholders wealth.

The term human resource management (HRM) and human resources have largely replaced the term personnel management (people management as a description of the process involved in managing people in organizations (Armstrong M., 2006). Human resource management is a strategic and coherent approach to the management of an organization most valued assets- the peoples contribute individually and collectively to the achievement of its objectives (Armstrong M., 2006)

HRM is "a strategic and coherent approach to the management of an organization's most valued assets the people working there who individually and collectively contribute to the achievement of its objectives" (Armstrong, 2014). This emphasizes people as key assets aligned with organizational goals.

Project Human Resource Management includes the processes that organize, manage, and lead the project team. “The project team is comprised of the people with assigned roles and responsibilities for completing the project work. Project team members may also be referred to as the project's staff." (PMI,2013).

2.2.5 project management processes

PMBOK 5th Edition outlines four key processes in Project Human Resource Management to effectively organize, manage, and lead project teams. There are four project management processes in the Human Resources Management Knowledge Area. One of them is in the Planning Process Group, and the other three are in the Executing Process Group. There are no human resource processes in the Monitoring & Controlling Process Group.

The first process, that of Plan Human Resources Management, creates the Human Resources Management Plan which is the framework for all of the other processes. The second process, that of Acquire Project Team, is in the Executing process group and is where the project manager, like the director of an orchestra, acquires his performers and their instruments. The third process, also in the Executing process group, is Develop Project Team, and this is where the project manager, like the director of an orchestra, has them rehearse together so that they work together in concert. The last process, likewise in the Executing process group, is the process Manage Project Team. What if one of the instruments is playing out of tune with the

others? Well, you need to adjust the performance of that one player. It could be a problem with the director himself (or herself), if the piece is being played so quickly that accuracy (quality) suffers as a result.

2.1.5 Human Resource Management Practice in Project Management

Project Human Resource Management includes the procedures used in organizing and managing the project team. Members of the team are people who have been given particular tasks and duties that need to be performed to complete the project. The team needs to be consulted actively during the planning process because their contributions enhance the process and make them more committed to the project. As the project moves forward, the team changes over time.

All people involved in the project form what is called the project team. There is a subgroup in the project team that is made up of people who undertake such activities as planning, monitoring, and completing the project. This subgroup is known as the project management team, which may also be referred to as the leadership team, executive team, or core team.

2.1.6 The project Human Resource Management Process

A crucial field of expertise in project management, project human resource management (PHRM) concentrates on the efficient formation, growth, and administration of the project team. Project Human Resource Management is defined by the Project Management Institute in previous editions of A Guide to the Project Management Body of Knowledge (PMBOK® Guide) as the procedures that manage, lead, and organize the project team (PMI, 2013; PMI, 2017). In order to ensure that project goals are achieved effectively, this process entails human resource planning, recruitment of the project team members, developing their abilities, and managing their performances. The sixth edition lays more focus on interpersonal skills, teamwork, and leadership as important factors that will lead to increased productivity and efficiency in teams.

Project human resource management and HRM Techniques are highly associated with one another in terms of this research because they emphasize the importance of human beings towards the achievement of project objectives. Human resource management practices, which include recruiting and selecting, training and developing, evaluating performance, and motivating the staff, influence the abilities, commitment, and cooperation among project team members, leading to greater productivity, decreased conflicts, and better performance of projects. Therefore, Project Human Resource Management becomes an important determinant

of not only effectiveness but also the success of projects in that it becomes a key method of executing HRM strategies.

Develop Human Resource Plan

This is the process of creating a human resource management plan by identifying and recording the roles, responsibilities, required skills, and reporting relationships for the project. The plan also includes the identification of training needs, team building strategies, recognition and reward plans, compliance considerations, security issues, and the effect of the human resource management plan on the organization.

Inputs	Tools & Techniques	Output
• Project management plan • Activity resource requirement • Enterprise environmental factors • Organization process assets	• Organization chart • Networking • Organizational theory • Expert judgment • Meetings	• Human Resource Management Plan

Table 1 HR plan inputs, tools and techniques and outputs

Source: PMI

Acquire Project Team

The process of acquiring project team is an activity that allows selecting and approving human resource availability according to the list of required skills and criteria for choosing human resource for the purpose of obtaining the team necessary to accomplish project work.

Inputs	Tools & Techniques	Output
• Human resource management plan • Enterprise environmental factors • Organizational process assets	• Pre-Assignment • Negotiation • Acquisition • Virtual team • Multi-Criteria decision analysis	• Project staff assignments • Resource calendar • Project Management plan

Table 2 Acquire project team: inputs, tools and techniques and outputs

Source: PMI

Develop Project team

It is a procedure used to enhance abilities, team dynamics, and the general project environment in order to boost project performance. Project success depends heavily on teamwork, and one of a project manager's primary duties is to build an efficient team.

Inputs	Tools & Techniques	Output
• Human resource management plan • Project staff assignments • Resource calendar	Interpersonal skill • Training • Team-building activities • Ground rules • Colocation • Recognition and rewards • Personnel assessment tools	Team performance assessment • Enterprise environmental factors update

Table 3 Develop project team: inputs, tools and techniques and outputs

Source-PMI

Manage Project Team

Monitoring team members' performance and empowering them to use feedback to address operational and strategic problems and manage change to maximize project performance constitute the process of managing a project team. It affects how a team behaves, handles conflict, settles disputes, and evaluates the effectiveness of team members.

Inputs	Tools & Techniques	Output
• Human resource management plan • Project staff assignments • Team performance assessment • Issue log • Work performance report • Organizational process assets	• Observation & conversation • Project performance appraisal • Conflict management • Interpersonal skill	Change request • Project management plan update • Project document update • Enterprise environmental factors update

Table 4 Manage project team: inputs, tools and techniques and outputs

Source: PMI

2.1.7 Human Resource Management Practices

Human Resource Management (HRM) became a systematic managerial tool in the second half of the twentieth century (Armstrong, 2014). There are many examples and approaches within HRM field demonstrating the close connection between HRM practices and organizational performance. Research findings indicate that investments into such practices have a positive effect on organizational performance (Datta, 2003). Wright (2003) also notes that organizational success depends on the level of employees' commitment to it. Singh (2004) proves the positive influence of team selection, development, appraisal, and rewards on organizational success. In addition, as demonstrated by Fey and Bjorkman (2001), HR practices have a positive effect on all types of employees and, consequently, affect organizational results.

The project by definition is a unique and time-bound activity (PMI, 2008). This explains the importance of human resources in projects. The emphasis on the need for project human resource management is made even in the separate chapter in the PMBOK, but there are still many strategy gaps in project organizations. For the project to be successful, it is important to create project-oriented HRM processes and get results due to the effective use of them (Gareis, 2010).

Project Team Selection

A project team comprises the project manager as well as several other individuals who work together to meet the project goals. Generally, team members are selected from different functional areas due to having required skills or expertise. Most project managers select individuals from different departments of the company. The duties of the project manager

include coming up with schedules for allocating resources based on minimum estimates and submitting bids to management. At the same time, the project manager should try to negotiate with the functional manager for getting suitable staff (Kerzner, 2003).

Different issues affect such negotiations; some of the most common ones are availability in the short and long term, load handling capabilities, continuity, teamwork ability, and skill level. Highly talented staff members are always in high demand. In most cases, they can only be available for limited periods of time. There are several questions that can arise from this situation: Is it more important to have talented people on board at certain intervals, or people with low talent on a constant basis? Does constant interruption have an effect? Can lower level people replace the highly talented people?

The next important issue with team selection involves internal versus external staffing. Sometimes, there is a need to hire contractors or outside consultants because internal staff members lack qualifications needed for the task at hand. However, there are both benefits and difficulties connected to organizational relations and management when dealing with this issue.

It is evident that the human factor plays an important role here, making the topic of HRM relevant to projects. According to Chapman & Webster (2003), recruitment and selection process includes job advertisement, application submission, initial screening, and eventually, selecting a candidate. It goes without saying that recruitment and selection are some of the most basic practices of HRM used to find a suitable candidate.

Project Team Performance Appraisal

Performance appraisal means the evaluation of the performance and the qualifications of an employee relative to the duties associated with the designated position. Such a process is used administratively for placements, recognition, awards, and other matters related to personnel. In recent times, the term performance appraisal or performance evaluation has become common practice. It involves a systematic assessment of the job-related abilities of an employee and his/her future potential, usually conducted by supervisors/managers. Appraisals may be either formal or informal; the former happens on a formal basis, and the latter comes about unexpectedly.

Fairness and justice have become the expected features of the appraisal process; in essence, they reflect the key qualities of evaluation. Employee performance reviews should be consistent with the organizational culture and employees' skills (Ebrahim, 2005). Von's General

Systems Theory outlines organizational structure and suggests that it is a system whose subsystems are Human Resource Management (HRM) practices needed for achieving the desired outcomes. Moreover, the Hierarchy of Needs Theory by Maslow implies that without rewarding employees for achieving satisfaction, there will be no effectiveness in organizational systems.

Five Elements of Performance appraisal

✓ Planning and goal setting: The work plan must be prepared while holding the one-to-one session. It brings the desired focus by specifying goals to be achieved and what needs to be done and when.

✓ Monitoring: At each one-to-one meeting, managers should revisit the work plan to track progress and evaluate employee performance against agreed objectives.

✓ Development and improvement: Managers should encourage continuous growth by supporting further skill enhancement and performance improvement.

✓ Reward and compensation: Celebrating achievements collectively fosters team cohesion. Employees need to feel included and connected to the success of the group.

✓ Feedback: Constructive and motivational feedback helps employees recognize their strengths, stay engaged, and understand that their contributions are valued.

Features of performance appraisal

✓ Informal or institutionalized: if the assessment is carried out according to principles, procedures and systems then it is institutionalized, but if the above criteria are not taken into account, it is said to be informal assessment.

✓ Open or secret: the evaluation could be open or secret.

✓ Character Based: This type of performance assessment is based on qualities and characteristics that are important to effectiveness and success in a particular job or organization.

✓ Task-based: The focus of this type of evaluation is not on the person, but on the content of the task to be carried out.

✓ Target Based: This type of assessment advances task-based methods by setting several key realistic goals that affect success or failure.

✓ Result-based: the evaluation type is based on the final results over a period of timer

2.2.9 Development Perspective of HRM and Project Success

Human resource plays an important role for the success of an organization. An environment should be created where the element of a project is managed with perfection to achieve project success (Kerzner H., 1987). Many organizations have moved from conventional to project management but still human resource plays an important role for the success of both conventional and project-based organizations. Mostly the human resource management processes are for permanent organization where employees have fixed position and not for project-based organization where project managers have no any specific position (Packendorff, 2002). In permanent organizations employees training are arranged in a formal way whereas, in project-based organization project manager take more responsibility and have less time for the completion of the project so they work more to complete the project in time. These circumstances have forced to create new strategy of human resource development for the project-based organizations. It has created a new way of recruiting employees for short term basis for specific project and career development as well. HRD put significant effect on the performance of the employee sand increase their level of commitment and knowledge (Hutchings, Zhu, & Cooper, 2009). Performance of the employees increase and they work more to achieve objectives of the organizations when the support and incentive by the organization are equal or greater than the output of the employee, (Masterson & Stamper, 2003) and this support and incentives increase the level of commitment of the employees and employees contribute more in the organization. Adequate human resource management facilitates employees to participate and perform the operations of the organization effectively and efficiently to achieve the goals and objectives of the organization (Susan, 2012). Human resource management consists of guideline, training and process that have effect on the attitude, behavior and outcome of the employees. Human resource management is considered as the most important and beneficial asset of the organization.

Training and Development

Training and development refer to programs carried out by organizations with the goal of increasing knowledge and skills of employees, as well as providing advice on how to do certain things better. As pointed out by Armstrong (2014), training should have a clear objective, the

subject matter must be relevant to what participants do in their jobs, and the training methods used must match not only the objectives but also the participants. The main goal of training staffs is learning and acquiring skills. In this case, skill acquisition is common for both training and development; however, their orientation is quite different.

Importance of training and development

• Enhances skill development

• Increase productivity

• Improve quality and safety

• Keeps employee motivated and enhance contribution level

Effective training practice

Armstrong 2006, has summarized the below practices for effective training

• Effective training uses the systematic approach by emphasizing on skill analysis.

• The purpose of the training should be clearly defined.

• The content of the training should be related to the work context of the participants.

• The training technique used should be appropriate to the purpose of the course and to the characteristics of participants.

• A blend of different technique should be used where appropriate.

Reward and Recognition

Reward and recognition system deals with all about strategies, policies and processes required to ensure that the contribution of people to the organization is recognized by both financial and non-financial means. It is about the design, implementation and maintenance of reward systems (reward processes, practices and procedures), which aim to meet the needs of both the organization and its stakeholders.

Overall aim here is to motivate people and acknowledge their contributions in a fair and equitable manner considering their contribution towards the objectives of the organization (Armstrong, 2014).

As rewards and motivations are closely connected to organizational success, it is evident that reward and recognition have an influence on the success of projects in an organization working on projects. According to Fumás, (2007), from an organizational perspective, salaries are proportional to the importance of education knowledge and training, whereas marginal notes theory of (Becker, 2006) states from an individual perspective that individual performance is motivated by rewards credits. Interestingly, from the General system theory perspective, both views conclude that ECS influence the success of a project.

Reward and recognition are not confined to financial gains alone. Non-financial rewards also come into play in recognition and rewards process and these include recognition, scholarships and increased responsibilities among others.

Elements of reward and recognition system

The correct reward and recognition system is a combination of monetary and non-monetary rewards offered to employees. It can generate valuable business results in terms of increased productivity and loyalty, and it also offers hiring benefits, as a good rewards program should set your company apart from other employers. In general, there are different reward and recognition system elements. (Chron,2020)

Basic Pay: it is the fixed salary or wage which constitutes the rate for the job.

Individual performance related pay: This is a cash bonus determined by performance assessment and ratings.

Bonuses: These are rewards for success that are paid in the form of a lump sum in relation to the results achieved by individuals, groups or organizations.

Incentives: These are payments related to the achievement of previously set goals and are intended to motivate people to achieve higher levels of performance.

Commission: this is a special form of incentive usually for sales representatives.

Skill based pay: this is a payment that varies according to the level of skill achieved by the individual.

Competence related pay: pay that varies according to the level of competence achieved by the individual.

Allowances: these are elements of compensation provided as a separate amount for aspects of the job such as overtime, shift work, assignment to a project, etc.

Employee Benefits: these are also known as indirect compensation including pensions, sickness benefits and insurance. These include elements of remuneration paid in addition to various forms of cash payments.

Importance of Reward management

Reward management supports the achievement of business goals by helping to ensure that the organization has the talented and engaged people it needs. It contributes to the achievement of high performance by ensuring that the reward system recognizes and encourages it. Reward management can define expectations through performance management and contingent pay schemes. Armstrong, (2014).

2.2. Empirical Review

Many researchers have looked at the relationship between project human resources management activities and project success. The one area that stands out is the process of acquiring the team members. This process determines the success of a project because it involves hiring people who have the skills to work on the project. For instance, Jiang (2013) studied how the process of acquiring team members affects the success of projects in the software industry. They found that organizations that had well-defined and structured acquisition processes, including clear job descriptions and rigorous selection criteria had higher project success rates. Another study by (soltani, 2016) investigated the relationship between team member acquisition processes and project success in the construction industry. They found that organizations that had formalized processes for recruiting and selecting team members experienced higher project success rates.

These studies suggest that an effective team member acquisition process, including recruitment, and selection can positively affect project success by ensuring that the right individuals with the necessary skills and competencies are brought into the team.

A variety of scholars have performed research on the connection between team appraisal and project success. In one of his studies, Hoegl (2001) assessed the effect of the project performance evaluation process among 85 projects in the realm of research and development, and found that those whose teams had more formalized appraisal procedures were able to achieve greater success. In a similar study, Tywoniak (2011) examined construction projects

and came to the conclusion that an efficient project appraisal process improves communication, coordination, and collaboration among project team members, which leads to greater project success. Lastly, Ghasemzadeh (2016) carried out research on the impact of IT project appraisals and found out that an efficient appraisal system positively influences the motivation, performance feedback, and goal setting of organizational team members, leading to successful project outcomes.

Training and development activities are equally important in helping project teams work successfully. One study by (Tannenbaum, 1991) examined the effect of training interventions on team performance. They found that teams that received training showed significant improvements in their performance compared to teams without training.

Another study by (craeford, 2006) investigated the relationship between project management training and project success. They found that organizations that invested in project management training experienced higher project success rates.

Studies have shown that there is a significant relationship between training, development, and reward systems and the level of success in project management. Lee (2013), for instance, found out that in information technology projects, the level of training and development led to high success rates. The conclusion that can be made from this study is that the involvement in training makes teams more efficient in terms of performance, better project managers, and more successful.

Reward systems are another critical aspect in making teams more successful in their projects. DeMatteo (1998) carried out a study on the impact of team-based rewards and discovered that rewarding teams and individuals makes them highly motivated, satisfied, and committed to the organization's objectives. The same findings were established by Ende (2002), who carried out a study of innovative projects, where he found out that having good goal setting and rewards makes projects more successful. According to Mone (2010), the issue of rewarding employees is very important since it helps create more engagement and improved performance among employees.

2.3 Conceptual Framework

This research is based on HRM and project management theories. The two state that organizational behavior does not lead to any results, but affects the performance of the workers performing project activities. The project Management Institute state that the key factor that determines the success of a project is effective performance of the teams implementing project

tasks and management of the resource used. Training, performance appraisal, and motivational programs used in HRM increase the capabilities and involvement of workers thus improving their performance.

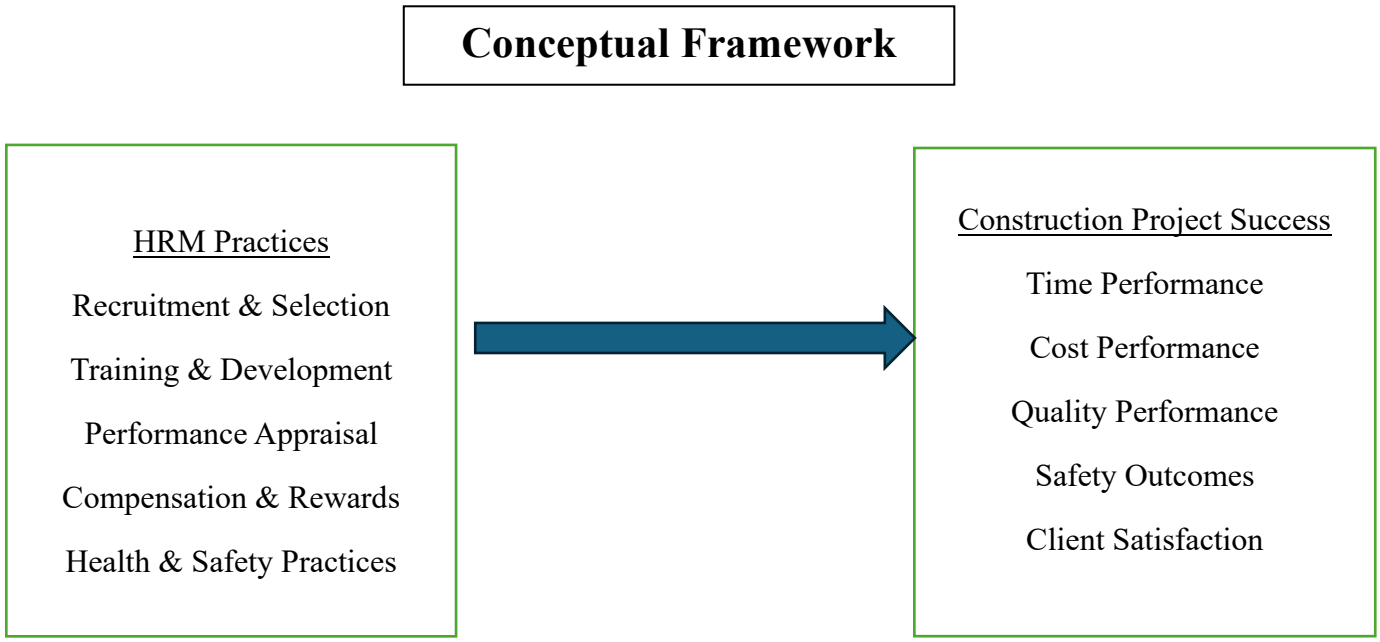


Figure 1 Conceptual Framework of the Study

CHAPTER THREE

RESEARCH METHODOLOGY

3. Introduction

This chapter describes the research design and methodology used in conducting this study at Ethiopia Engineering Corporation (EEC). This includes the sources of data used, methods of data collection, and sampling procedures. Methods of data analysis are also highlighted, as well as the reasons for using these methods, particularly with respect to the conceptual framework that underlies this study. Ethical issues will also be considered during the research.

3.1 Research Design

Research design is the most essential part of research work because it is the plan and procedure for conducting research. In this study explanatory and regression analysis are used as a research design. Based on (Creswell, 2014) explanatory research design explores and explain the relationship between variables and regression analysis is statistical technique used to examine the relationship between dependent variable and one or more independent variables. This provides an accurate and valid representation of the factors that are relevant to the research question. The explanatory analysis explains the general information about the respondents who participated in the study and the regression analysis will analyze the respondents' answer. According to (Anol, 2012), the descriptive survey involves acquiring information about one or more groups of people asking them questions and tabulating their answers.

A research design is defined as a set of procedures for obtaining and analyzing information that guarantees its relevance in relation to the goals of the research and its efficiency during the implementation process. In other words, a research design is the basic structure in which the research is organized (Kothari, 2004).

An explanatory research design is used in this study because of the possibilities of describing attitudes, perceptions, characteristics, behaviors, activities, events, and situations provided by this research design. Both qualitative and quantitative approaches will be involved in this type of research. The use of explanatory research is suitable for studying cause-and-effect relationships, which exist only in cases where some kind of causality evidence is available (Kothari, 2004).

Considering the main aim of this study (exploring the effect of HRM practices on the success of projects), an explanatory research design will be quite relevant.

3.2 Research Approach

This study employed a quantitative research approach to examine the effect of human resource management practices on project success at Ethiopian Engineering Corporation (EEC). The quantitative approach was considered appropriate because it enables the collection and analysis of numerical data to objectively assess the relationships between variables and test the proposed hypotheses.

The study focused on five human resource management practices, namely recruitment and selection, training and development, performance appraisal, compensation and reward, and health and safety practices, as independent variables, while project success was treated as the dependent variable. Data were collected using structured questionnaires administered to employees of EEC.

The quantitative approach facilitated the use of statistical techniques, including descriptive statistics, correlation analysis, analysis of variance (ANOVA), and multiple regression analysis, to determine the magnitude and significance of the relationships between HRM practices and project success. Therefore, this approach was appropriate for achieving the objectives of the study and generating reliable empirical evidence.

3.3 Data Type and Data Source

For this study, primary data will be employed through questionnaires administered to employees. The sources will include various Engineers, formans and skilled labors who work at EEC Projects found mainly in AA, as well as Head Office departments related to human resource management. To ensure accuracy and relevance, the study will also draw on secondary sources such as government publications, scholarly articles, project reports, and dissertations that provide context and explain general issues.

Under this study questionnaires and interview will be used as the main methods of data collection. The rationale behind this is discussed as follows.

3.3.1 Questionnaires

Questionnaires will serve as the primary data collection instrument in this study. To collect the necessary data from employees, a structured questionnaire will be developed that will incorporate closed-ended questions. This instrument will then be distributed to the selected sample population.

3.4 Population and Sample Size

3.4.1 Target Population

The study employed a census approach to collect data from the target population. The total population consisted of 100 employees working in the Ethiopian Engineering Corporation (EEC) Construction Business Unit. Since the population size was manageable, all employees were included in the study to ensure comprehensive coverage and to eliminate sampling error.

The census approach was considered appropriate because it enabled the researcher to obtain information from the entire target population and improve the reliability and representativeness of the findings. Accordingly, structured questionnaires were distributed to all 100 employees, and the collected responses were used for data analysis.

Employees from managerial, professional, and technical positions who were directly involved in project activities were included in the study because they possessed relevant knowledge regarding HRM practices and project success.

3.4.2 Sample Size

The study used a sample size of 100 respondents selected from employees of Ethiopian Engineering Corporation who had participated in project-related activities and possessed relevant work experience within the past five years. The respondents were purposely selected because they were considered capable of providing reliable and relevant information regarding the effect of Human Resource Management (HRM) practices on project success. Since the study focused specifically on employees directly involved in project implementation, the selected sample was considered adequate to achieve the objectives of the research and provide meaningful findings related to project performance and HRM practices within the organization.

3.5 Method of Data Analysis

The quantitative data will be analyzed using statistical methods such as descriptive and inferential methods using the Statistical Package for the Social Sciences (SPSS), Version 23. The data obtained from respondents will be summarized and displayed through charts and graphs, accompanied with appropriate discussion. The output generated through the data analysis will be presented in percentage, ANOVA, frequency distribution, mean, standard deviation, correlation and multiple regressions.

3.6 Validity and Reliability

3.6.1 Validity

Validity is the degree to which a test measures what it purports to measure. (Creswell J. W. 2009). To check and maintain the validity of the data collection items, intensive literature will be reviewed, expert in the area will be consulted and pilot study will be conducted. This study will address content validity through the review of literature and adapting instruments used in previous research.

3.6.2 Reliability

Reliability, as stated by Bhattacherjee (2012), is the extent to which a measurement tool for assessing a certain construct yields accurate and reliable data. This implies that if one uses the same measurement tool to assess the same construct several times under stable conditions, he or she should obtain similar results, unless there are changes to the phenomenon being measured. This research will administer the most commonly used internal consistency reliability measure of Cronbach‘s alpha which is originally designed by LEE Cronbach in 1951. According to (Mallery, 2003) provide the following rule when Reliability is greater than 0.9 it is Excellent, when it is between 0.9 and 0.8 it is Good, if it is between 0.8-0.7 is Acceptable, when it is between 0.7-0.6 Questionable, if it is between 0.6-0.5 Poor and bellow 5 Unacceptable. The Cronbach‘s alpha coefficient for this study will be calculated by distributing questionnaires.

Table 5 Reliability

Dimension	Cronbach's Alpha
Recruitment & Selection	0.885
Training & Development	0.875
Performance Appraisal	0.884
Compensation & Reward	0.731
Health & Saftey Practice	0.876
Project Success	0.78

Source-from survey (2026)

The Cronbach’s Alpha results show that all variables are above 0.70, ranging from 0.731 to 0.885. This confirms good internal consistency, meaning the questionnaire items are reliable for analysis.

3.7 Ethical Consideration

The respondents will be approached after the purpose of the study has been explained in detail so that they will be comfortable to give their response in time. All participants will be asked to voluntarily participate in the data collection by collaborating in filling the questionnaire and responding. By doing so, the respondents will be free of any harm and more importantly their views will be very confidential and anonymous.

CHAPTER FOUR

RESULT AND DISCUSSION

The following chapter shows the assessment done to determine the impact of HRM policies on projects' success in Ethiopian Engineering Corporation (EEC). In analyzing this case, the use of both descriptive and inferential analyses was used to determine the relationship between independent and dependent variables using the data provided from distributed questionnaires.

In determining this effect, the population used in this study was employees of the Ethiopian Engineering Corporation. A total number of 100 employees made up the sample, and all questionnaires were answered by each one.

4.1 Descriptive Analysis

4.1.1 Demographic Profile of Respondents

The first part of the questionnaire consists of five items about demographic information of the respondents. It covers personal data such as gender, age, education level experience and department they work in.

Table 6 Demographic characteristic of respondents

Demographic Variables		frequency	percent
Gender	Male	60	40%
	Female	40	60%
	Total	100	100%
Age	20-29	55	55%
	30-39	35	35%
	40-49	8	8%
	50+	2	2%
	Total	100	100%
Education Level	Diploma	6	6%
	BA/BSc	64	64%
	Masters	30	30%
	Total	100	100%
Experience with in the organization	<2 years	26	26%
	2-5 years	40	40%
	6-10 years	22	22%
	10+ years	12	12%
	Total	100	100%
Department	Engineer	74	74%
	Health & Safety	4	4%
	HR	4	4%
	Supervisor	9	9%
	Project Manager	8	8%
	Architect	1	1%
	Total	100	100%

Source-from the survey (2026)

According to Table 4.1, The male respondents account 60% and the female respondent's percentage is 40%. Although the majority of the respondents are male, it is safe to say the view of both genders are encompassed in the survey.

When we look at the age profile of the respondents, 55% are aged between 20-29 years, 35% are 30-39 years,40-49 age level has 8 % and 2% accounts the age above 50. From this data one can refer that the majority of the respondents, i.e. 55% are found to be in the age group of 20-29.

The educational background of employees in the survey, as shown in the table above shows that first degree holders are 64%, Diploma holders are 6% and those holding master's degree are 30%. This implies the respondents are fit to understand the questionnaire and hence the responses are reliable in the data processing and subsequent findings.

With regards to their positions 26(26%) are participants with professional experience below two years. The highest number of participants which account 40% are people with professional experience between two to five years. On the other hand, only 12% of the participants had professional experience above ten years, while 22% had professional experience between six to ten years. Thus, from the findings, it can be concluded that most of the views of workers with relatively early to mid-level career experience were captured in this study.

The job distribution among the respondents reveals that a large number of respondents were Engineers with a total of 74 people (74%). It means that the data collection for this research paper was carried out largely among the professionals directly involved in projects and operations. Supervisors comprised 9% whereas project managers included 8 people (8%)

In general, it can be said that male employees, educated young adults with comparatively fewer years of employment, dominated the respondents' demographics. This suggests that EEC employees have a deficiency of senior, experienced employees which could result in incurring the high cost of recruitment, training and other expenses which could be easily avoided by keeping qualified, experienced employees to complete the project on schedule, under budget, and with the desired qualities. The distribution of responses from various demographic profiles, however, would provide more accurate data for the analysis's trustworthiness.

4.1.2 Analysis of HRM practices

To analyze the response on the effect of HRM practices (in terms of employee selection, training and development, performance appraisal, recognition & reward, HSE practice) and project success: mean and standard deviation statistics were applied. One of the benefits of the explanatory design is that it helps to present quantitative descriptions in manageable form and minimizes the bulk of data into simpler summary (Kothari,2014).

The following measures of scale range have been considered to understand the HRM and the success rate of the company. The means are given below: 4.21-5.00 – strongly agreed; 3.41-4.20 – agreed; 2.61-3.40 – neither agree nor disagree; 1.81-2.60 – disagree; 1.00-1.80 – disagree strongly (Btawee, 1987). The mean score of each variable was found after considering the mean score of all the items in each dimension equally. According to a five-point Likert type scale, respondents were asked to give the rating based on the fact that 1 represents strongly disagree and 5 stands for strongly agree.

4.1.2.1 Recruitment and Selection

The descriptive statistics analysis for the Recruitment and Selection practice demonstrates that respondents have a favorable perception toward the organization's recruitment procedures and staffing practices. As presented in the table, all items recorded mean scores above 4.00 on a five-point Likert scale, indicating a high level of agreement among respondents. This shows that the process involved in the selection of people in the organization are seen as effective and competency driven, which can be helpful in improving the general performance of the project as well.

Among all statements in the questionnaire, the following one scored the highest average rating (M=4.53, SD=0.594):" I was selected to participate in the project because of my experience in other projects." These results show that previous working experience and professionalism were very important in the selection process used by the organization. At the same time, the low dispersion among the scores shows that participants had similar views about the importance of experience in making decisions about project membership. It means that the organization takes in to consideration the necessity to involve competent people in project implementation.

Another question with a high average rating (M=4.45, SD=0.557) stated the following:" The company facilitates the opportunity for the internal staff to compete equally for vacant positions in the project according to their professionalism and experience." Therefore, we can assume that the staff agrees that the organization offers equality when it comes to employment.

Moreover, the statement "The company recruitment process is fair and transparent" also achieved a relatively high mean value (M=4.42, SD=0.589). This means that employees have a perception that recruitment processes are objective, and not biased towards particular applicants in any way. Transparent recruitment system plays a significant role in promoting trust among employees, avoiding perceptions of unfairness, and making sure that competent people join the projects.

However, the statement "job descriptions in my organization are clear and well-defined" gained the lowest mean score compared to other variables in the research (M=4.3, SD=0.847). This result still shows an acceptable level of agreement among respondents since the mean value is quite high. However, the higher standard deviation suggests greater disagreement between respondents regarding this particular item.

Thus, the results of the survey demonstrate that the organization performs effective recruitment and selection activities based on the principles of fairness, transparency, equality of opportunities, and competency-based selection of personnel. The relatively high mean scores and low standard deviation suggest positive employee perceptions. Therefore, the organization can significantly improve its capability through effective recruitment and selection activities.

Table 7 summary of project team recruitment and selection

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
The company recruitment process is fair and transparent	100	3	5	4.42	.589
The company facilitates the opportunity for the internal staff to compete equally for vacant positions in the project according to their professionalism and experience	100	3	5	4.45	.557
Job descriptions in my organization are clear and well-defined	100	2	5	4.30	.847
I was Selected to participate in the project because of my experience in other projects	100	2	5	4.53	.594

Source-survey result (2026)

4.1.2.2 Training and Development

According to the analysis of descriptive statistics for the training and development construct, it can be noted that respondent's attitudes towards training in the organization are rather positive. All statements have 4.30 on a five-point scale which proves a rather high level of agreement. Thus, it should be concluded that the organization invests a lot efforts into employee development offering relevant and useful training. Such training can help individuals improve their performance and contribute to achieving organizational goals.

When comparing the mean values of statements, one can conclude that the highest value (M=4.5, SD=0.611) has been achieved in case of the statement "The training delivery methods used by the trainers were relevant to the training objectives". Therefore, it should be stated that respondents strongly agree that the trainers offer relevant and appropriate training methods and approaches in order to achieve certain goals. The comparatively small standard deviation shows that respondents' opinion about this aspect is quite homogeneous which means that most of them have positive attitude towards the training delivery process.

Similarly," the provided training makes me more productive and makes me do my job efficiently" received a very high mean score (M=4.44, SD=0.625). This implies that employees consider the trainings offered by the organization helpful in boosting their productivity and efficiency at work. It seems like the organization's training efforts have had a positive impact on improving employee competency and performance. Furthermore, the low variability of the scores suggests that most respondents had similar opinions about the value of trainings to their job performance.

"Discrimination does not occur during selection of candidates to participate in training sessions" scored 4.39 mean and 0.65 SD. This means that the organization's employees consider the trainings by their organization unbiased and equally available to all employees. It is vital that organizations should treat their employees fairly when providing them with learning opportunities. Fairness in training is an important factor influencing motivation and trust among employees

In addition, "The training offered fits the job requirements of the employees" had a mean score of 4.38 while the standard deviation was 0.616. This means that the respondents agreed with the fact that the company offers training programs that are related to the specific job

requirements of the employees. In order for any organization to succeed in implementing their projects, the training development program should fit the job requirements.

From the above descriptive statistics findings, it is evident that the perception about the organization regarding its training and development activities s favorable. The positive mean values ad small standard deviation show that the respondents agree that the organization offers relevant and effective training programs. This shows that training and development are important since they play an important role in developing employee capabilities.

Table 8 summary of Training and Development practice

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
There is no discrimination among employees in the training selection process.	100	2	5	4.39	.650
The training provided matches employees' job needs.	100	3	5	4.38	.616
The provided training helps me to be more productive and perform my tasks effectively	100	3	5	4.44	.625
The training delivery methods used by the trainers were relevant to the training objectives.	100	3	5	4.50	.611

Source-survey result (2026)

4.1.2.3 Performance Appraisal

Descriptive statistics analysis of the performance appraisal dimension shows that the respondents' perception towards the organization's appraisal and evaluation system is quite positive. specifically, all the questions were rated more than 4.40 on a five-point Likert scale which means high level of agreement among employees. It can be concluded that an efficient and well-established performance appraisal system implemented by the organization promotes effective performance management and project objectives accomplishment.

The highest mean score (M = 4.47, SD = 0.502) was obtained by the items "Performance appraisal is done on time without any interruption", "The performance appraisal criteria are clearly articulated and understood by the employees" and "I get timely feedback from my

supervisor". The findings suggest that the respondents strongly agree that the organization is conducting performance evaluations consistently and on time. Furthermore, employees find the appraisal criteria clear and understandable, which results in increased transparency and fairness of the evaluation process. Also, feedback from supervisors in a timely manner is viewed positively as it indicates that employees are provided with constructive information that helps them to improve their work performance and bring their efforts in line with organizational goals. The very low values of standard deviation indicate a high consistency of the responses of employees, thus indicating a common positive perception

The mean of 4.43 with a standard deviation of 0.517 was given for the statement "Performance appraisal is conducted by the immediate supervisor of the employee or by the employee". The finding indicates that the respondents agree that the appraisal process is done by the right evaluators who are familiar with the employee's work performance. The involvement of direct superiors or self-assessment processes can improve the precision and efficacy of performance evaluations, leading to increased accountability and professional development in the organization.

Similarly, the item "Performance appraisal was done based on the project objective and goal" had a mean of 4.40 and a standard deviation of 0.512. The finding indicates that employees view the appraisal system to be consistent with project goals and organizational objectives.This alignment is important because it allows for the assessment of employee performance against the project expectations and strategic priorities and helps improve project results and organizational success.

The findings reveal that employees have positive perception of the organization's performance appraisal practices. The high mean scores and low standard deviation values show that respondents consistently agree that the appraisal system is timely, transparent, objective and aligned with organizational goals. These findings suggest that good performance appraisal practices could be an important tool in motivating employees, improving work performance and facilitating successful project implementation in the organization.

Table 9 summary of performance appraisal practice

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
performance appraisal was done based on the project objective and goal	100	3	5	4.40	.512
Performance appraisal is conducted on time without interruption.	100	4	5	4.47	.502
The performance appraisal criteria are clearly stated and understood by employees.	100	4	5	4.47	.502
I receive timely feedback from my supervisor.	100	4	5	4.47	.502
Performance appraisal is conducted by either the employee's immediate supervisor or the individual themselves.	100	3	5	4.43	.517

Source-survey result (2026)

4.1.2.4 Compensation and Reward

Descriptive statistics analysis of the Reward and Recognition dimension indicates that the respondents' perception of the Reward and Recognition practices of the organization is very positive. All items listed a mean score more than 4.30 on a five-point Likert scale, which means a strong level of agreement among employees. This means that the organization's reward and recognition system is perceived as being effective, motivating, and aligned with organizational and project goals. The relatively low standard deviation values are also indicative of the consistency in the respondents' opinions about the fairness and effectiveness of the reward practices that are being implemented within the organization.

In the list of variables, the statement "The employees have received enough financial compensation for their performance on the project" scored the highest mean score (M = 4.54, SD = 0.501). In other words, this finding suggests that the respondents were highly satisfied with the fact that the organization has provided the workers with enough financial compensations for their good performance in the project. Indeed, financial motivation is a

critical factor that helps motivate the workers to improve their performance and make contributions to project success.

Likewise, the item “The reward and recognition policies inspired me to work harder and do well in order to accomplish the objectives of the project” received a very high mean value of 4.44 with a standard deviation of 0.499. This implies that employees consider the reward and recognition process as a very important motivator that increases performance and commitment towards meeting the set objectives. Rewards help in boosting motivation, leading to increased commitment and dedication towards the organizational goals.

“The recognition and reward schemes are meant to achieve the business objectives” earned a mean score of 4.43 while the standard deviation was 0.498. This indicates that people think that the company uses the reward process to motivate actions that lead to the achievement of organizational goals.

In the same manner, the item “The practice for rewarding employees’ recognition in the project was very fair and transparent” had an average rating of 4.41 and a standard deviation of 0.494. The high ratings suggest that the reward distribution in the organization is generally viewed as a fair and transparent process. An equitable system of rewards is important to ensure the trustworthiness and satisfaction of employees, and reduce biases from favoring individuals.

Additionally, the rating of “Project teams are collectively recognized as successful in attaining the objective of the project” is 4.37 with a standard deviation of 0.506. The high ratings indicate that the organization acknowledges team contributions towards project success through collective recognition. Group rewards are significant to encourage team cooperation.

Lastly, the variable “Employees receive appreciation and recognition letters for good performance on the project” had the lowest mean score ($M = 4.33$, $SD = 0.473$), but even then, it represents a relatively high agreement among respondents about their views on the reward and recognition practice. In this case, we can conclude that the employees appreciate the non-financial form of recognition used by the organization and consider it effective.

On the whole, it is possible to state that the results of the descriptive statistics analysis demonstrate that the organization uses effective reward and recognition practices which motivate its employees and serve organizational goals. It means that the employees have consistently positive perceptions towards the rewards provided by the organization. Therefore,

it is safe to say that proper reward and recognition practices can have positive impacts on employee motivation and performance.

Table 10 summary of compensation and reward summary

	N	Mean	Std. Deviation
The recognition& reward packages are designed to support business goals	100	4.43	.498
Employees receive appreciation and recognition letters for good performance on the project.	100	4.33	.473
Employees receive adequate financial rewards for good performance on the project	100	4.54	.501
Project teams are rewarded as a group for achieving project success	100	4.37	.506
The reward and recognition practices motivated me to do more and perform better to meet the project goals	100	4.44	.499
Employee's reward and recognition practice on the project was fair and transparent	100	4.41	.494

Source-survey result (2026)

4.1.2.5 Health and Safety

According to the descriptive statistics analysis for HSE practices, the respondents view the use of HSE practices positively. This is demonstrated by the fact that all statements obtained mean scores greater than 4.20 on the Likert scale used. Therefore, the organization's employees share the same view concerning its ability to maintain safe operations that have no negative impact on the environment where project activities are undertaken. Moreover, the fact that all standard deviations are small shows that there is consensus in the responses provided concerning the implemented HSE practices.

In the list of variables provided for analysis, one can see that the highest mean score was registered for the statement "Incidents are reported, investigated, and corrective actions are taken promptly." In fact, this means that all respondents agree that the organization is implementing an effective procedure concerning the reporting, investigating, and taking appropriate corrective actions in case of an incident. It is worth mentioning that such actions can play a very important role in terms of preventing any accidents at the workplace.

Similarly, the statements “HSE policies and procedures are clearly communicated on the project site” and “Regular HSE training and awareness programs are conducted for employees” scored very highly in mean rating (M = 4.43, SD = 0.517). This indicates that workers believe that the company is proactive in communicating health and safety standards, as well as conducting continuous training programs on HSE practices. Communication and regular training are significant in enabling employees to identify risks, hazards, and their roles in maintaining workplace safety.

“Risks and hazards are properly identified and controlled before work commences” was rated as M = 4.41, SD = 0.570. This indicates that workers believe that there is adequate consideration by the organization of risks and hazards management before work starts. Identifying and controlling hazards before starting work is essential in reducing accidents and achieving operational efficiency and compliance with workplace safety standards.

Likewise, the variable “Management shows great commitment towards health, safety, and environment initiatives” earned an average rating of 4.39 with a standard deviation of 0.618. This indicates that employees consider management to be committed and involved in health, safety, and environment activities in the company. It is essential for management commitment to ensure the creation of positive safety culture, active involvement of employees in safety measures, and the effective implementation of health, safety, and environment programs in all project activities.

However, the lowest average was achieved by the variable “Safety guidelines (including the use of PPE) are strictly enforced and monitored” (M = 4.27, SD = 0.548). Although the result represents a positive assessment of safety guidelines enforcement, it could imply that there are certain differences in the implementation and monitoring of safety practices in project activities.

Generally, the results show that the perceptions of the employees concerning the HSE practices in the organization are positive. This is based on the fact that both the mean scores and standard deviations are high and low respectively. This means that the employees feel that the organization communicates well in terms of safety policies, provides necessary training, takes care of work-related risks and is committed to maintaining health, safety, and environment standards.

Table 11 summary of health and safety practice

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
HSE policies and procedures are clearly communicated on the project site	100	3	5	4.43	.517
Management demonstrates strong commitment to health, safety, and environmental practices.	100	1	5	4.39	.618
Regular HSE training and awareness programs are provided to employees.	100	3	5	4.43	.517
Risks and hazards are properly identified and controlled before work begins.	100	2	5	4.41	.570
Safety rules (including PPE usage) are strictly implemented and monitored.	100	2	5	4.27	.548
Incidents are reported, investigated, and corrective actions are taken promptly.	100	3	5	4.51	.541

Source-survey result (2026)

4.1.2.6 Independent Variables

The results of the descriptive statistics of the significant independent variables reveal that most employees have a favorable perception of the HRM practice and the HSE practice practiced in the company. As presented in the table, it can be observed that all variables obtained an average value above 4.40 on the five-point Likert scale, which implies that employees have a favorable opinion on the success of organizational practices.

In terms of the variables, Training & Development had the highest mean (M = 4.51, SD = 0.493). This indicates that the employees viewed the training sessions conducted within the organization as being very efficient in enhancing their level of knowledge and performance. This clearly indicates that the organization places much emphasis on skill development among its employees, thus positively impacting performance and success of projects within the organization. Additionally, the low value of standard deviation clearly indicates that the

respondents shared the same positive perception about the training sessions conducted within the organization.

In addition, Performance Appraisal achieved a high mean rating (M = 4.45, SD = 0.416) since the employees agree that the organization has an effective and fair performance appraisals process that is related to project goals. In other words, the small standard deviation shows that there is consensus among the employees about the process of appraisal. Effective performance appraisals systems are necessary for promoting employee responsibility and productivity.

Moreover, Recruitment and Selection received an average rating of 4.43 with a standard deviation of 0.567. It is clear from these figures that employees believe that the company's recruitment and staffing procedures are fair, impartial, and competence-driven. Employees are convinced that decisions about project staffing are made professionally, on the basis of experience and equity.

Compensation and Rewards, on average, had a value of 4.42 and showed the smallest standard deviation from all other variables (SD = 0.323). This means that the perception of organizational fairness and motivation regarding reward and recognition within the organization is fairly consistent across all employees. Since there is minimal variance in the responses, one can say that there is a high degree of consistency in the opinions of respondents concerning the amount of financial and non-financial rewards given by the organization.

Similarly, the HSE practice yielded a mean score of 4.41 and standard deviation of 0.434. This finding clearly indicates that there is a positive perception among the employees about the organization's health, safety, and environmental practices. This implies that the respondents generally believe that the organization effectively communicates the organization's safety policies, conducts HSE training, recognizes any hazards at the workplace, and creates a safe working environment. The effective health, safety, and environmental practices play a crucial role in ensuring employee wellness and safety, as well as in maintaining effective project operations.

In summary, the descriptive statistics results show that there is a positive attitude among the employees regarding the HRM and HSE practices adopted by the organization. From the high mean scores obtained in each dimension, it can be concluded that there is an effective implementation of the recruitment and selection process, training and development, performance appraisal, compensation and rewards, and HSE practices within the organization. The low standard deviation in each case further suggests the consistency in perceptions.

Table 12 summary of independent variables

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Recruitment and selection	100	3.25	5.00	4.4250	.56687
Training and Development	100	3.50	5.00	4.5075	.49295
Performance Appraisal	100	4.00	5.00	4.4500	.41621
Compensation and rewards	100	4.00	5.00	4.4217	.32347
HSE practice	100	2.83	5.00	4.4067	.43443

Source-survey result (2026)

4.1.2.7 Project Success

According to the descriptive statistics analysis of Project Success dimension, respondents believe that the organization is quite successful in implementing its projects based on a number of performance measures. As seen from the table below, all statements have mean scores exceeding 4.30 on a five-point Likert scale, meaning that there was a high degree of agreement among respondents about the successful accomplishment of goals set before the organization.

When examining the variables, it can be seen that the statement "Client/stakeholder satisfaction is achieved" has received the highest mean score (M = 4.52, SD = 0.502). In other words, the respondents strongly agreed that the organization successfully satisfied its clients and stakeholders through the implementation of its projects. The achievement of the satisfaction of clients and stakeholders is considered one of the main indicators of project success since it shows how successful the organization is in achieving its goals and delivering quality products/services.

Likewise, the statements “The project successfully achieved its set goals and objectives” (M = 4.40, SD = 0.492), “The Project team has high productivity” (M = 4.39, SD = 0.510), and “The project had few accidents/incidents” (M = 4.39, SD = 0.510) received very high average scores. In this regard, one can argue that the respondents strongly feel that the company's projects meet their intended purposes, have productive project teams, and provide safe working conditions.

Productivity and safety are key aspects that show the level of effectiveness and good management of the process.

The statement “The project completed within the set budget constraints” received an average score of 4.36 with a standard deviation of 0.595. From this result, it is evident that respondents strongly believe that their organization conducts projects successfully in terms of finance, i.e., it stays within the planned budget. However, from the relatively high standard deviation, we may conclude that there is a little variation among respondents' opinions on this indicator compared to other project management indicators.

Similarly, the statement “The project output has influenced the company's business strategy” was scored 4.36 with standard deviation of 0.503. The implication from the results above is that the respondents viewed the project output as having a positive influence on the business strategies and goals of the organization. Strategic projects are an important part of any organization and play a significant role in enhancing competitiveness and organizational growth.

The statement “The project was completed in accordance with schedule” was also scored 4.34 with a standard deviation of 0.497. From the results, one could conclude that respondents believed that the project completion occurs on schedule. Completing projects on schedule is an important element in evaluating project success. Delays in completion of projects often lead to increased cost and decreased organizational performance.

In general, the results indicate that respondents have extremely positive perceptions about their organization’s success in completing projects. Since there were very high mean scores on all of the project success criteria, this implies that projects are accomplished successfully in terms of time, costs, productivity, safety, stakeholder satisfaction, and organizational goal attainment. Moreover, the low standard deviations also indicate consistency in employee answers. It could be assumed that good HRM and HSE practices play an important role in increasing the overall success of projects in organizations.

Table 13 summary of project success measurement

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
The project was successfully completed within the expected time	100	3	5	4.34	.497
The project successfully met the expected goals and objectives	100	4	5	4.40	.492
The project was completed within the expected budget	100	1	5	4.36	.595
The Project outcome has affected the company's business strategy	100	3	5	4.36	.503
The Project team has high productivity	100	3	5	4.39	.510
The project has minimal accidents/incidents.	100	3	5	4.39	.510
Client/stakeholder satisfaction is achieved.	100	4	5	4.52	.502

Source-survey result (2026)

4.1.3 Correlation Analysis

The research utilizes correlation analysis to measure the level of association between the variables (HRM Practice and employee engagement). Pallant (2005) observes that correlation analysis determines the nature and strength of the association between two variables. The bivariate Pearson Product Moment Correlation coefficient (r) was used to analyze the relationship between dependent and independent variables.

P Value should be tracked carefully while testing the hypothesis. The independent variable does not affect the dependent variable when the p value is greater than 0.05. However, if $p<0.05$, then the independent variable affects the dependent variable. Pallant (2005).

Table 14 Correlation

Correlations

		Recruitment & Selection	Training & Development	Performance Appraisal	Compensation & Reward	Health & Safety Practice	Project Success
Recruitment & Selection	Pearson Correlation	1	.926**	-.010	.195	.069	.061
	Sig. (2-tailed)		.000	.924	.052	.497	.545
	N	100	100	100	100	100	100
Training & Development	Pearson Correlation	.926**	1	-.017	.252*	.104	.075
	Sig. (2-tailed)	.000		.870	.011	.305	.461
	N	100	100	100	100	100	100
Performance Appraisal	Pearson Correlation	-.010	-.017	1	.862**	.702**	.738**
	Sig. (2-tailed)	.924	.870		.000	.000	.000
	N	100	100	100	100	100	100
Compensation & Reward	Pearson Correlation	.195	.252*	.862**	1	.740**	.778**
	Sig. (2-tailed)	.052	.011	.000		.000	.000
	N	100	100	100	100	100	100
Health & Safety Practice	Pearson Correlation	.069	.104	.702**	.740**	1	.804**
	Sig. (2-tailed)	.497	.305	.000	.000		.000
	N	100	100	100	100	100	100
Project Success	Pearson Correlation	.061	.075	.738**	.778**	.804**	1
	Sig. (2-tailed)	.545	.461	.000	.000	.000	
	N	100	100	100	100	100	100

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

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

Source-from Survey (2026)

From the above table, there is a very high degree of statistical significance in the correlation between recruitment & selection and training & development, r = .926 (p < .001). The result

indicates that companies with good recruitment strategies will be likely to have effective training & development schemes. However, recruitment & selection shows no statistical significance with performance appraisal ($r = -.010$, $p = .924$), compensation & reward ($r = .195$, $p = .052$), health and safety practice ($r = .069$, $p = .497$), and project success ($r = .061$, $p = .545$). This implies that the implementation of recruitment & selection schemes does not necessarily improve company performances in these areas.

Training & development and compensation & reward have a low degree of statistical significance with a positive relationship, $r = .252$ ($p = .011$). It means that organizations that carry out training for their employees tend to have effective reward schemes. However, training & development shows no statistical significance with performance appraisal ($r = -.017$, $p = .870$), health and safety practice ($r = .104$, $p = .305$), and project success ($r = .075$, $p = .461$).This indicates that training and development alone may not directly translate into improved project success unless supported by other HRM systems.

Firstly, there exists an evident and statistically significant positive correlation between performance appraisal and the following independent variables. Performance appraisal is highly correlated with compensation and reward ($r = .862$, $p < .001$), health and safety practice ($r = .702$, $p < .001$) and project success ($r = .738$, $p < .001$). Thus, it may be assumed that performance appraisal is one of the critical factors of reward implementation and health and safety improvement and thus, can lead to the increased level of project success.

Secondly, the variable of compensation and reward is highly correlated with two other independent variables. There exist evident and statistically significant positive relationships between compensation and reward, health and safety practice ($r = .740$, $p < .001$) and project success ($r = .778$, $p < .001$). Thus, it can be assumed that compensation and reward system significantly influence the mentioned factors, especially regarding employee health and safety and project success. Nevertheless, the influence of compensation and reward on employee productivity is mediated by performance appraisal.

Thirdly, the variable of health and safety practice exhibits an evidently high and statistically significant positive relationship with project success ($r = .804$, $p < .001$).This finding emphasizes the importance of maintaining safe working conditions as a critical factor in improving overall project performance.

Generally speaking, findings from the research prove that not all HRM activities influence the success of the projects. Recruiting and selecting ($r = .061$, $p = .545$) and training and

development (r = .075, p = .461) activities are not statistically significantly correlated to project success. It means that they do not have a direct influence but can play their role indirectly. Performance appraisal (r = .738, p < .001), compensation and rewards (r = .778, p < .001), and health and safety practice (r = .804, p < .001) activities are highly positively and statistically significantly correlated to project success. Among the three aforementioned HRM activities, health and safety practices are the most correlated

4.2 Inferential Statistics

4.2.1 Regression Analysis

Linear regression was conducted to identify cause and effect between independent and dependent variables and also, Regression analysis was used in order to estimate or predict the effect of independent variable on dependent variable. The significance level of 0.05 with 95% confidence interval was used. The dependent variable was Project Success and the independent variables include project team Selection, Project team performance appraisal, Project team Training and Development, and Recognition and Reward practice. The reason for using regression analysis was to assess the direct effect of HRM practice on the success of a project at Ethiopian Engineering Corporation (EEC).

4.2.1.1 Multi collinearity Assumption Test

According to (Cochran, 1997) stated that presence of multi collinearly can be detected by just cooking at variance inflation factor [VIF] value of each explanatory variable. That is ,if VIF is more than 10 ,then, it signifies that there is interdependent among independent variable but all variables less than 10 it have no interdependence among variables or in other round Multi Collinearity occurs when independent variables in the regression model are more highly correlated with each other than with the dependent variable .Tolerance value and variation inflation factor [VIF] for each in dependent variables determines Multi Collinearity.

Multi Collinearity is problem and exists when tolerance is below 0.10 and average VIF is larger than 10. The multi collinearity test conducted showed that multi collinearity was not problem because tolerance value was not below 0.10 for each in dependent variable and variation inflation factor for each independent variable was not great than 10.

4.2.1.2Normality Test

The normality of the data was assessed using skewness and kurtosis statistics. The skewness values ranged from -0.402 to 0.258, while kurtosis values ranged from -1.870 to 0.290. Since

all values fall within the acceptable range of ±2, the data can be considered approximately normally distributed. Therefore, the assumption of normality required for regression analysis was satisfied.

Table 15 Skewness and Kurtosis

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Recruitment & Selection	100	3.25	5.00	4.4250	.56687	-.250	.241	-1.452	.478
Training & Development	100	3.50	5.00	4.5075	.49295	-.083	.241	-1.870	.478
Performance Appraisal	100	4.00	5.00	4.4500	.41621	.153	.241	-1.763	.478
Compensation & Reward	100	4.00	5.00	4.4217	.32347	.258	.241	-1.377	.478
Health & Safety Practice	100	2.83	5.00	4.4067	.43443	-.402	.241	.290	.478
Project Success	100	3.43	5.00	4.3943	.34105	.191	.241	-.701	.478

Source-from Survey (2026)

Table 16 Model summary

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.855[a]	.731	.717	.18138

a. Predictors: (Constant), HSE practice, Recruitment & Selection, performance appraisal, Compensation & Reward, Training & Development

The Model Summary table provides information on the general fit of the regression model in terms of the ability to explain the association between the independent variables and Project Success.

The value of correlation coefficient (R) of 0.855 reveals that there exists a significant positive association between the independent variables – Recruitment and Selection, Training and Development, Performance Appraisal, Compensation and Reward, and Health and Safety Practice, with the dependent variable Project Success.

The coefficient of determination (R Square) equals 0.731; hence, approximately 73.1% of the variance in Project Success is accounted for by the independent variables.

Adjusting R square, we find that the adjusted R square is equal to 0.717. This means that, after accounting for the number of predictors, 71.7% of the variation in Project Success is accounted for by the independent variables.

However, the rest 28.3% of variations in Project Success can be attributed to factors that were not considered during the analysis, as well as errors.

Moreover, the standard error of the estimate is 0.18138, implying that the calculated values are quite accurate compared to the real values.

In general, one may state that the results obtained in the course of analysis demonstrate that the use of a regression model is reasonable and valid.

Table 17 Anova

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8.422	5	1.684	51.200	.000[b]
	Residual	3.093	94	.033		
	Total	11.515	99			

a. Dependent Variable: Project Success

b. Predictors: (Constant), HSE practice, Recruitment & Selection, performance appraisal, Compensation & Reward, Training & Development

The ANOVA table was utilized to determine the significance and fitness of the regression model with regards to the influence of the independent variables on Project Success.

From the results, the regression model is found to be statistically significant since the obtained F value of 51.200 has a significance level p = 0.000, below the acceptable level of 0.05. It can thus be concluded that the independent variables Recruitment and Selection, Training and Development, Performance Appraisal, Compensation and Reward, and Health and Safety Practice significantly predict Project Success.

With the regression sum of squares value of 8.422, the explained variation in Project Success with regard to the independent variables in the regression model can be measured, while the residual sum of squares value of 3.093 measures the unexplained variation with other factors.

On the whole, based on the results of ANOVA analysis, it can be stated that the regression equation is statistically appropriate to analyze the influence of HRM practices on project success.

Table 18 coefficients

Coefficients[a]

		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
Model		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	.937	.273		3.433	.001		

	Recruitment & Selection	.086	.088	.143	.971	.334	.132	7.566
	Training & Development	-.143	.109	-.207	-1.310	.193	.114	8.766
	Performance Appraisal	.043	.103	.053	.420	.675	.182	5.490
	Compensation and Reward	.420	.144	.398	2.925	.004	.154	6.486
	Health & Safety Practice	.380	.064	.484	5.978	.000	.435	2.298

a. Dependent Variable: Project Success

A multiple linear regression analysis was conducted to examine the effect of Recruitment and Selection, Training and Development, Performance Appraisal, Compensation and Reward, and Health and Safety Practice on Project Success.

The regression coefficients presented in the table indicate the contribution of each independent variable to the prediction of project success. The unstandardized coefficient (B) explains the direction and magnitude of the relationship, while the significance value (p-value) determines whether the relationship is statistically significant.

The findings reveal that Recruitment and Selection have a positive relationship with Project Success (B = 0.086); however, the relationship is statistically insignificant ($p = 0.334 > 0.05$). This implies that recruitment and selection practices do not significantly influence project success in the current study.

Training and Development displays a negative association with Project Success (B = -0.143) and is also insignificant (p = 0.193 > 0.05). This means that there is no significant contribution from the training and development practices to project success.

Performance Appraisal reveals a positive but insignificant impact on Project Success (B = 0.043, p = 0.675 > 0.05). Thus, performance appraisal practices cannot be used to predict project success.

Compensation and Reward reveal a positive association and statistical significance in relation to Project Success (B = 0.420, p = 0.004 < 0.05). This means that when compensation and reward practices are improved, project success increases. The results indicate that compensation and reward practices make an important contribution towards project success.

Health and Safety Practice also reveal a positive association and high statistical significance in relation to Project Success (B = 0.380, p = 0.000 < 0.05). It implies that improvements in health and safety practice practices contribute towards project success. Out of the predictors, Health and Safety Practices show the highest standardized beta value (β = 0.484).

As for multicollinearity analysis, the values of Variance Inflation Factors (VIFs) range from 2.298 to 8.766, and the tolerance levels range from 0.114 to 0.435. The areas of Recruitment and Selection, Training and Development, Performance Appraisal, and Compensation and Reward have relatively high values of VIFs, which means some multicollinearity between the variables. Yet, no VIF value is above 10, which means that there is no significant multicollinearity in this regression.

Generally, it can be stated that there are two predictor variables whose effect on project success is significant. They are Compensation and Reward and Health and Safety Practice. As for Recruitment and Selection, Training and Development, and Performance Appraisal, they do not seem to affect project success.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 Summary of Major Findings

This study examined the effect of Human Resource Management (HRM) practices on project success at Ethiopian Engineering Corporation using descriptive statistics, correlation analysis, ANOVA, and regression analysis. The findings revealed that employees generally held positive perceptions toward the HRM and Health, Safety, and Environment (HSE) practices implemented within the organization.

According to the demographics analysis, most of the respondents were male employees, young adult workers aged between 20-29, and first-degree holders. The respondents had between 2 to 5 years of work experience and mainly consisted of engineers involved in project operations. These statistics suggest that the study obtained opinions from employees who are actively participating in project operations.

From the descriptive analysis, the study found that all HRM practice dimensions had mean scores higher than 4.00, indicating very high levels of agreement by employees about the effectiveness of HRM processes of the organization. Of the six independent variables used, Training and Development had the highest mean score (M = 4.51). The result suggests that the employees valued the training programs provided by the organization and believed that such trainings were significant in their jobs. Other independent variables such as Performance Appraisal, Recruitment and Selection, Compensation and Reward Practices, and HSE practices also had high mean scores.

As far as the results of the success of projects are concerned, employees agreed that projects are completed successfully concerning objectives met, productivity maintained, low incidence of accidents, satisfaction of stakeholders, timely completion of projects and budgets managed appropriately.

However, the correlation analysis indicated the existence of different relationships between HRM practices and the success of the project. There was no statistically significant relationship between Recruitment and Selection and Training and Development and project success. Nevertheless, there existed a statistically significant and positive relationship between Performance Appraisal, Compensation and Reward, and HSE Practice and project success. Of

all these variables, HSE Practice displayed the most statistically significant and highest correlation coefficient with the success of the project ($r = .804$, $p < .001$).

The results of the regression analysis also suggested that Compensation and Reward and HSE Practice are significant predictors of project success. Compensation and Reward made a positive and statistically significant contribution to project success ($B = 0.420$, $p < 0.05$), while HSE Practice provided a more positive contribution ($B = 0.380$, $p < 0.001$). There were no statistically significant effects of Recruitment and Selection, Training and Development, and Performance Appraisal.

ANOVA results showed that the regression model used to predict project success was statistically significant and thus fit enough to be used. In other words, ANOVA gave us an F-value of 51.200 with a significance value of $p=0.000$, which was less than the threshold of 0.05 used in evaluating the model. The results thus showed that there was a significant impact of the independent variables on project success. Therefore, the rejection of the null hypothesis in this case stated that HRM practices collectively did not significantly affect project success.

Moreover, the model summary results revealed that 73.1% of the variance in project success could be accounted for by the independent variables ($R^2 = 0.731$). Thus, the results showed a high degree of explanatory power by the model.

Generally speaking, the study reveals the importance of effective HRM practices and HSE in ensuring successful projects within the organization. Among those aspects that influenced project success, the two most important were the Compensation and Reward system and Health and Safety practices.

5.2 Conclusions

This study examined the effect of Human Resource Management (HRM) practices on project success at Ethiopian Engineering Corporation, focusing on recruitment and selection, training and development, performance appraisal, remuneration and reward systems, and health and safety practices.

The findings indicate that HRM and HSE practices are generally well institutionalized within the organization, and employees perceive them positively in terms of fairness, relevance, and effectiveness. The results further show that the organization's projects achieve a high level of success in meeting predefined objectives and stakeholder expectations, reflecting strong project execution performance.

Among the HRM dimensions investigated, compensation and reward systems and health and safety practices emerged as the most significant predictors of project success. This suggests that employee motivation and workplace safety function as key mediating mechanisms through which HRM practices translate into improved project outcomes.

Overall, the study concludes that effective implementation of HRM and HSE practices significantly enhances project success. The evidence highlights that HRM systems are not merely administrative tools but strategic drivers of performance in project-based organizations. Therefore, aligning HRM practices with employee motivation and occupational safety priorities is essential for sustaining high levels of project effectiveness and organizational success.

5.3 Recommendation

From the findings of this study, the following recommendations are offered to the Ethiopian Engineering Corporation and other organizations with projects for purposes of increasing the likelihood of success through HRM.

- The firm should develop a better compensation and reward scheme as the results of the study indicated that compensation and rewards significantly impact project success. Management should ensure that there is an appropriate remuneration package, both monetary and non-monetary, to motivate workers and improve their level of commitment towards achieving project goals.
- The organization needs to pay more attention to health, safety, and environment as these were found to be the strongest predictors of project success. There is a need for the company to increase the level of safety in the work environment through provision of training to staff members, identification and management of risks and hazards, using personal protective equipment, and monitoring safety levels on site.
- The organization should strive at improving its training program so that training can be job-related and effective. Continuous professional development of employees is necessary so that they are equipped with relevant technical skills to facilitate efficiency. Evaluation of the training programs will also be crucial in ensuring that the training initiatives have an impact on the performance of the workers.
- The organization should try to improve its performance evaluation program through the provision of clear guidelines as well as ensuring that performance assessment is used for improvement purposes and reward.
- Lastly, further research is encouraged in future. In this case, research may include large samples as well as considering other possible determinants of project success apart from those evaluated here. Other determinants may include leadership styles, organizational culture, technological capacity, and employee engagement among others.

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APPENDIX

QUESTIONNAIRE

Dear Respondent,

The survey was prepared for use in an academic study. The purpose of the research is to investigate the influence of HRM practices on the success of projects.

Answers to all questions will be strictly confidential and used only for academic purposes. Please give truthful answers to all questions posed.

Thank you for your participation.

Section A: General Information

1. Gender: ☐ Male ☐ Female ☐ Prefer not to say

2. Age: ☐ 20–29 ☐ 30–39 ☐ 40–49 ☐ 50+

3. Education Level: ☐ Diploma ☐ Bachelor's ☐ Master's ☐ PhD

4. Work Experience: ☐ <2 years ☐ 2–5 years ☐ 6–10 years ☐ 10+ years

5. Position: ☐ Engineer ☐ Supervisor ☐ Project Manager ☐ HR Staff ☐ Other: _____

Section B: HRM Practices

Think of HRM practices of the EEC Construction and its projects and choose the number that best describes your agreement and disagreement to the following.

1=Strongly Disagree 2=Disagree 3=Neutral 4=Agree 5=Strongly Agree

Recruitment & Selection		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
No	Statement	1	2	3	4	5
1	The company recruitment process is fair and transparent	☐	☐	☐	☐	☐
2	The company facilitates the opportunity for the internal staff to comute equally in the project according to their professionalism and experience	☐	☐	☐	☐	☐
3	Job descriptions are clear	☐	☐	☐	☐	☐
4	I was Selected to participate in the project because of my experience in other projets	☐	☐	☐	☐	☐
Training & Development		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
No	Statement	1	2	3	4	5
1	There is no dsicrimination based on employees training selection process	☐	☐	☐	☐	☐
2	The training given matches job needs	☐	☐	☐	☐	☐
3	The provided training helped me to be productive and perform my task effectively	☐	☐	☐	☐	☐
4	The training delivery methods used by the trainers were relevant with the trainiing objectives	☐	☐	☐	☐	☐
Performance Appraisal		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
No	Statement	1	2	3	4	5
1	performance appraisal was done based on the project objective and goal	☐	☐	☐	☐	☐
2	performance appraisal has been done timely without interruption	☐	☐	☐	☐	☐
3	The performance appraisal measurement is stated clearly for employees	☐	☐	☐	☐	☐
4	I have received timely feedback form my supervisor	☐	☐	☐	☐	☐
5	performance appraisal is done by individual or supervisor	☐	☐	☐	☐	☐

Compensation & Rewards		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
No	Statement	1	2	3	4	5
1	The recognition& reward packages are designed to support business goals	☐	☐	☐	☐	☐
2	Employees receive appreciation and recognition letters for good performance on the project.	☐	☐	☐	☐	☐
3	Employees receive adequate financial rewards for good performance on the project	☐	☐	☐	☐	☐
4	Project teams are rewarded as a group for achieving project success	☐	☐	☐	☐	☐
5	The reward and recognition practicies motivated me to do more and perform better to meet the project goals	☐	☐	☐	☐	☐
5	Employee's reward and recognition practice on the project was fair and transparent	☐	☐	☐	☐	☐
Health and safety		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
No	Statement	1	2	3	4	5
1	HSE policies and procedures are clearly communicated on the project site	☐	☐	☐	☐	☐
2	Management demonstrates strong commitment to health, safety, and environmental practices.	☐	☐	☐	☐	☐
3	Regular HSE training and awareness programs are provided to employees.	☐	☐	☐	☐	☐
4	Risks and hazards are properly identified and controlled before work begins.	☐	☐	☐	☐	☐
5	Safety rules (including PPE usage) are strictly implemented and monitored.	☐	☐	☐	☐	☐
6	Incidents are reported, investigated, and corrective actions are taken promptly.	☐	☐	☐	☐	☐
Section C: Project Success						
Project Success		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
No	Statement	1	2	3	4	5
1	The project was successfully completed within the expected time	☐	☐	☐	☐	☐
2	The project successfully met the expected goals and objectives	☐	☐	☐	☐	☐
3	The project was complted within the expected budget	☐	☐	☐	☐	☐
4	The Project outcome has impacted the company's business strategy	☐	☐	☐	☐	☐
5	The Project team has high productivity	☐	☐	☐	☐	☐
6	The project has minimal accidents/incidents.	☐	☐	☐	☐	☐
7	Client/stakeholder satisfaction is achieved.	☐	☐	☐	☐	☐