ADDIS ABABA UNIVERSITY

SCHOOL OF COMMERCE PROGECT MANAGEMENT PROGRAM

THE EFFECT OF ORGANIZATIONAL CULTURE ON PROJECT PERFORMANCE IN THE CASE OF ETHIOPIAN AIRLINES IT PROJECTS: AN INTEGRATION OF LEARNING ORGANIZATION.

By

Wubshet Zenebe (GSE/6908/09)

A PROJECT SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIRMENTS FOR A MASTER OF ARTS IN PROJECT MANAGEMENT

Advisor: Bahran Asrat (PHD)

June 2024

Addis Ababa, Ethiopia

STATEMENT OF APPROVALS

APPROVED BY BAORD OF EXAMINERS

PROJECT MANAGEMENT PROGRAM

The Effect of Organizational Culture on Project Performance: In the case of Ethiopian Airlines IT projects an integration of learning organization.

BY: WUBSHET ZENEBE DEBELE

Advisor Name	Signature	Date
Internal Examiner Name	Signature	Date
External Examiner Name	Signature	Date

DECLARATION

I, Wubshet Zenebe, hereby declare that this thesis entitled "The Effects of Organizational Culture on Project Performance in the case of Ethiopian Airlines IT projects: an integration of learning organization" Has been carried out by me for the partial fulfilment for the degree of Master of Arts in project management from the Addis Ababa University. This thesis is my original work, has not been presented in any of other university and that all sources of materials used for this thesis have been duly acknowledged.

Wubshet Zenebe Debele
(REG No: GSE/6908/09)

Signature: _____

Date: _____

STATEMENT OF CERTEFICATION

This is to certify that, this project work "**The Effect of Organizational Culture Project Performance: In The Case of Ethiopian Airlines IT Projects: An Integration of Learning Organization.**", undertaken by **Wubshet Zenebe Debele** in partial fulfilment of the requirements for Master of Arts in Project Management in Addis Ababa University school of commerce, is an original work and not submitted earlier for any Degree either at this university or any other university.

_____

Bahran Asrat (PhD)

Research Project Advisor

ACKNOWLEDGMENT

If it wasn't for the mercy and grace of the almighty God, I could not have done this project, so I give my heartfelt gratitude to my lord. This is another favour I received from your uncountable blessings you put in my life, my lord. I am forever indebted of your help in my life.

I want to thank my advisor Dr.Bahran Asrat, for the support , direction and encouragement to enable me to finalize this project successfully.

I also thank my beloved families for your earnest pleadings and prayers to empower me to complete this project. I thank my wife and son for supporting me. In addition, I would like to thank employees of Ethiopian airlines who participated in this study. My friend Hailemichael Agajie thank you very much for your encouragement and support.

Table of Contents

List of Tables

List of Figures

Acronym and abbreviations

MRO: Maintenance Repair and Overhaul

HRM: Human Resource Management

IT: Information Technology

SPSS: Statistical Package for the Social Sciences

ANOVA: Analysis of Variance

CVF: Competing values framework.

M: Mean

SD: Standard Deviation

Abstract

The aviation industry is an environment that is characterized by competition and thus the overall performance of projects is largely defined by this factor of culture. Ethiopian Airlines serves the largest airline in Africa by the number of aircrafts, total revenue, and profit. To maintain its foremost position and further advance its led, the Airline feeds in the results of several IT projects. The purpose of this study is to examine the effect of organizational culture on the project's performance in the context of Ethiopian airlines IT projects integrating the learning organization concept. The research utilized a quantitative approach that would allow the use of quantitative data. The quantitative method, is a written questionnaire that is given to different departments in the CIO division. The study focuses on establishing the perception of managers and other employees in Ethiopian Airlines regarding their organizational culture and its impact on project performance. By doing this research, it is possible to get newer knowledge about organizational culture and all its implications on the outcome of projects, both in practical and theoretical dimensions. The study employed an explanatory and descriptive research design to investigate the impact of organizational culture and learning organization within Ethiopian Airlines IT projects. A quantitative, cross-sectional approach was adopted to explore the relationships between variables. Purposive sampling, guided by Yamane's (1967) formula determining a sample size of 164, was used to select respondents deemed most likely to provide relevant insights. Data collection was conducted via online questionnaires administered through Google Forms. Analysis of the collected data utilized SPSS Version 23, employing descriptive statistics for mean and standard deviation, correlation analysis to assess the strength of associations, and regression analysis to examine causal relationships between variables. The study examined the impact of organizational culture and learning organization on Ethiopian Airlines' IT projects using a quantitative, cross-sectional approach with 164 respondents. Analysis via SPSS showed positive trends and significant positive effects on project performance from effective behaviours, underlying assumptions, personal mastery, team learning, and systems thinking. However, espoused values had a weaker influence. Recommendations include strengthening organizational culture and aligning values with practices, and emphasizing personal mastery, team learning, and systems thinking through training initiatives.

Key words: Ethiopian Airlines, IT projects, Organizational culture, Learning organization

CHAPTER ONE

1 INTRODUCTION

1.1 Background of the Study

Organizational culture, as confirmed by many studies, has significant value when it comes to the smooth running of projects. The organizational culture encompasses the common values, beliefs, attitudes, traditions, and attitudes that define the workplace. Ethiopian Airline does different IT projects in order to make the airline operations efficient, to provide an excellent customer experience and also to be competitive.

In the context of the highly competitive world we live in, projects stand out as the key instruments for maintaining the status quo or setting a new pace. The performance of projects become major priorities for organizations that are pursuing to be a leader or to be a competitive player in the market (Turner & Müller, 2005). The success of the particular projects is the fundament to the ongoing and to the increase of the level of organizations. The impact of organizational culture on the success of projects has rather gained attention as numerous studies in the recent times would argue. Culture of an organization is the whole association value system which determines the sphere of the relations between the organisation worker and stakeholders.

The discovery of the idea of a learning organization as a foundation for the perfect managing of the projects has been growing rapidly (Zwikael & Globerson, 2006). An adopting organization basically exists to develop new processes and improve existing practices through joint efforts, experimentations, and innovations (Shenhar et al., 2001). It is well known that companies who embrace such an ideal usually have better results, a climate favourable for learning, and a mentality that enables people to successfully adapt, learn, and further develop (Cooke-Davies, 2002). However, the precise relationship of learning organizational culture to project success is beyond the current scope to be fully determined (Kivilä et al., 2007). So, this study attempts to explain the connection between learning organization culture and project success in the following few paragraphs.

The integration of learning organization model with a study into organizational culture and project performance presentation strategies will provide a distinctive angle (Ika et al., 2012). Such mentality maintains that a culture which primarily follow inheritance of learning and the development of ongoing processes can have some impact on the success of projects at a big scale (Besner & Hobbs, 2006).

The study is expected to uncover that the organization culture most notably continuous growth is the pillar of the success in projects. Those findings entail that transforming the project management paradigm into an active, collaborative and welcoming one with a stress on the continuous experimentation, innovation, and inspiration put forth becomes extremely important (Smith,2023).

Ethiopian Airlines is working on a number of projects starting from new IT capability, the enhancement of MRO capability, the improvement of the airports and other areas of the airline trying to consolidate the leading position and to become more competitive within the African continent. Hence, this study becomes of crucial significance in drawing the lessons from the past projects and bringing it to life to see how well it applies to the present and future.

As per review of Ethiopian Airlines Website (Ethiopian Airlines 2024), Ethiopian Airlines(Ethiopian) is Africa's largest airline and a major player in the global aviation industry. With its hub at Bole

International Airport, Ethiopian Airlines embodies the spirit of Africa, proudly carrying passengers and cargo across the continent and beyond It started its operation with five C-47 aircraft operating its debut fight to Cairo via Asmara on April 8, 1946. Ever since, it has been growing in leaps and bounds and continued to introduce cutting-edge aviation technology and systems. As aviation technology leader, Ethiopian was a pioneer in ushering in new aviation technology into Africa including the first jet airplane as well as the first B767, B777-200LR, B787 Dreamliner, and787-9 in the continent. Ethiopian also led the way in operating Africa's first Airbus A350 XWB. Currently, the airline has a fleet of more than 146 modern aircraft with an average fleet age of less than seven years; it has also more than 100 ultramodern aircraft on order.

Living its motto of Bringing Africa Together and Beyond, Ethiopian has created Africa-wide and transcontinental air connectivity networks linking its main hub, Addis Ababa to the rest of the world. The airline serves 136 international passenger and cargo destinations, including 63 African cities, with daily and multiple flights with a minimum layover in Addis. As a veteran carrier serving a vast intra-African network, Ethiopian flies to more destinations in the continent than any other airline.

In December 2011, Ethiopian took a giant leap forward in its successful journey by joining Star Alliance, the world's largest airline network. Over the years, the multi-award-winning airline has received countless coveted accolades and recognitions for its excellence including Skytrax's Four-Star Airline Certification, Best Airline in Africa title for several years in a row, and Overall Excellence for Outstanding Crisis Leadership Award to mention but a few (Ethiopian Airlines 2024).

Building on its continuous success, Ethiopian has achieved an average growth rate of 25 percent in the past decade. Having met its 15-year strategic plan, Vision 2025, ahead of time, Ethiopian has charted out a more ambitious strategic roadmap called Vision 2035 to further bolster its continuous growth.

1.2 Statement of the Problem

The aviation industry is known for its complexity, involving interconnected systems, strict regulations, and high risks. Belobaba et al. (2009) emphasized that the aviation sector operates in a dynamic environment influenced by technological advancements, global competition, and safety concerns. Projects in aviation are essential for driving innovation, enhancing operational efficiency, and ensuring safety. These projects cover a wide range of activities, from developing new aircraft models to implementing advanced air traffic management systems, all aimed at modernizing infrastructure, improving customer experience, and sustaining competitiveness within the industry.

There is scare or no study so far made to examine effect of organizational culture on project performance integrating Edgar Schein model of organizational culture and Peter Segne learning organization concept. This study examined effect of organizational culture on project performance using these models. This was beneficial to have enhanced understanding of the construct, validation and robustness of findings, methodological diversity and theoretical advancements.

To maintain its leading position in the African market and its competitiveness worldwide, Ethiopian Airlines is undertaking several projects like MRO capability developments, IT projects, Airport expansion projects and other several projects. However significant number of projects undertaken especially in house projects seldom meets its planned deadline.

As per status meeting of all IT projects on week 1 documented in Ethiopian Airlines Portal page, as of January 2024, there were 42 IT projects being undertaken by CIO division. Out of these projects 4 of the projects or 10% of the projects were delayed up on the review on that specific time, 1 project or 2% is

on hold, 3 projects or 7% was cancelled, 33 or 79% of the projects were under progress. It should be noted that if we track these projects well after their scheduled completion time, the percentage of delay was even higher.

Schein (2010) highlights the significance of organizational culture in shaping behaviours and decision-making processes within companies. Nonetheless, there exists a scarcity of thorough investigations specifically delving into the effects of organizational culture on project performance within the aviation sector. Furthermore, research by Belobaba et al. (2009) accentuates the ever-evolving nature of the aviation industry, marked by technological advancements, intense global competition, and safety imperatives. Despite these intricate dynamics, there persists a noticeable absence of scholarly exploration into the exact mechanisms through which organizational culture influences project results in aviation.

Past studies suggests that organizational culture plays a significant role in project performance, however there is also a gap on understanding of how learning organizations shape the relationship between culture and performance.

This study aims to address this gap by investigating the effect of organizational culture on project performance in the aviation industry. It aims to fill the gap by examining the extent to which Senge's learning organization model can facilitate the creation of a culture that enhances project performance.

1.3 Research Question

The study intends to answer the following basic questions.

A. Does the implementation of a learning organization culture influence project performance in the Context of Ethiopian Airlines?

B. Does the artefacts, behaviours, and underlying assumptions of an organizational culture affect project performance?

C. What are the specific aspects of organizational culture that have the greatest influence on project performance?

D. Does the cultivation of personal mastery, mental models, shared vision, team learning, and systems thinking, as advocated by Peter Senge, enhance project performance?

1.4 Research Objectives

1.4.1 General Objective

The objective of this research is to examine the effect between organizational culture and project performance, by integrating the concept of a learning organization proposed by Peter Senge and the three levels of organizational culture proposed by Edgar Schein.

1.4.2 Specific Objectives

- To examine the effect of artefacts and behaviours on project performance
- To examine the effect of espoused values on Project performance.
- To examine the effect of underlying assumptions on project performance.
- To examine the effect of personal mastery on project performance.
- To examine the effect of mental models on project performance.
- To examine the effect of shared vision on project performance.

- To examine the effect of team learning on project performance.
- To examine the effect of systems thinking on project performance.

1.5 Significance of the Study

The findings of this research hold substantial implications for airlines, particularly in terms of preserving and cultivating their current organizational cultures, which are anticipated to yield positive outcomes for project success. By using the outcome of this study, airlines can effectively identify and implement strategies to reinforce their existing cultures, thereby enhancing the likelihood of successful project outcomes. Additionally, the study facilitates the extraction of valuable lessons from its findings, enabling airlines to cultivate a culture conducive to continuous learning and improvement. This, in turn, enabled them to identify areas for enhancement and align their organizational culture more closely with the objectives of project success.

Moreover, the study's outcomes are invaluable to scholars, professionals, and academicians seeking to deepen their understanding of the effect of organizational culture and project performance. Serving as a point of reference for further investigation, the study contributes to advancing the scholarly discourse on this topic. By expanding the body of knowledge in this field, the study paves the way for future research endeavours aimed at exploring and elucidating the intricate dynamics between organizational culture and project success.

1.6 Scope of the Study

This study aims to explore the influence of organizational culture on project performance specifically within the context of Ethiopian Airlines. While various models are available to investigate this phenomenon, the research primarily adopted Edgar Schein's framework to delve into how organizational culture shapes project outcomes. Schein's model offers a thorough understanding of the layers of organizational culture and their effects on the behaviours and decision-making processes within organizations (Schein, 2010).

Additionally, the study incorporated Peter Senge's concept of a learning organization into its examination. Senge's model highlights the significance of ongoing learning, innovation, and adaptability within organizational settings (Senge, 1990). By integrating Senge's insights, the research endeavours to elucidate the ways in which the principles of a learning organization contribute to the outcomes of various projects.

Moreover, the research specifically concentrated on Ethiopian Airlines' unique operational environment. This focus provides valuable insights into how the intersection of organizational culture and the principles of a learning organization impacts project success within the aviation industry. Through this targeted approach, the study seeks to generate insights that can guide organizational strategies and decision-making processes within Ethiopian Airlines, as well as offer valuable lessons for other organizations operating under similar conditions.

1.7 Potential limitations of the Study

Given limited sample size and focus on a single organization, the findings of the study may not be generalizable to different organizational settings or sectors. A larger and more diverse sample of organizations and project teams from different industries and sectors would increase the generalizability of the findings.

Though there are other models to study effect of organizational culture on project performance this study used Edgar Schein's model of effect of organizational culture on project performance by integrating Peter Senge's concept of a learning organization's effect on project performance in case of Ethiopian airlines. In addition, time and resource constraints could affect depth of outcome of the study.

1.8 Organization of the Study

This study was organized as follows; Chapter covered background, problem statement, objectives, limitations, and scope of the study. Chapter two covered existing literature on effect of organizational culture on project performance by integrating Peter Senge's learning organization and Edgar Schein's model in understanding organizational culture and its impact on project performance. Chapter 3 was about the research design, methodology and data collection. Chapter four presents' data analysis using the method described in the methodology of the study. Chapter Five was discussions and recommendation based on the findings of the study. The references of the study were listed at the end.

CHAPTER TWO

2 REVIEW OF RELATED LITERATURE

In This chapter, review of literature related to the study is summarized and presented for both organizational culture and learning organization effect on project performance, Empirical reviews are included, conceptual framework, and hypothesis.

2.1 Introduction

Organizational culture represents integral side of organizational life; thus it affects numerous aspects, e.g. employees' behaviour, decision making process and organizational performance. This paper is about the question of the complexity of corporate cultures, and the theories of both Edgar Schein and Peter Senge, project effectiveness, and their interdependency in research. The final segment deals with a schematic diagram of main variables where the researcher created a graph on dependent and independent variables. Through conglomeration of already existing studies, this paper mainly strives to offer comprehension of the influence that using Senge's and Schein's models may have on the performance of projects.

2.2 Organizational Culture and Its Importance

Organizational culture is the crux of every workplace setting, determining the image of the work environment, guiding actions, and impinging on results. This part focuses on the core and meaning of organizational culture which examine how it affects the behaviour of employees and to how the culture prepares the project to be perform.

Organizational culture frames the organization's sense of values, belief, standards, habits, and norms that all members of the organization share and identify with. It is the embodiment of the organizational identity, which influences employees' perception of each other, their understanding of the guidelines laid down by the organization for interacting with internal and external stakeholders (Schein, 1985). Organizational culture holds pivotal significance for several reasons:

Firstly, it brings in a sense of belonging and cohesion among the employees and thereby attributes to the work satisfaction level and motivation among the company personnel (Cameron & Quinn, 2011). A vibrant and optimistic culture, if constructive, creates favourable conditions bringing the team together.

Besides, organizational culture puts a stamp on the working environment by presenting implicit guidelines of interacting and aligning which further result in appropriate communication and collaboration. The actions that find their place according to organizational culture are those that are consistent with values and motives thus help in maintaining the coherency which is the cornerstone of organizational culture.

However, organizational culture is in fact the most powerful factor that ensures the success and efficiency of the organization. It is also proved that those firms which value learning and adaptability can gain the competitive advantage and better achievement with financial performance (Kotter & Heskett, 1992).

Organizational culture is the base upon which employee’s actions are inspired, therefore, giving rise-in-spirit and behaviour change at work. A culture that welcomes support and provides inclusion for the employees will make them reciprocate with helpful behaviours, like teamwork, productivity, and creativity, in the process, which will have a positive influence on employee engagement and productivity (Robbins & Judge, 2018).

For example, in the intrinsic culture, employees find the tendency to share knowledge, mutual support, and pursuit of collective goals (Cameron & Quinn, 2011). The reverse of this is the cultures of hierarchical organizations valuing regulations and procedures within, the employees can demonstrate the forms of formal and structured Behaviours (Robbins & Judge, 2018).

2.3 Organizational Culture and Project Performance

The impact of organizational culture, widely reported to be the main factor of project performance, is well known. Organizational culture is the bios which change project outcomes via changing the interactions, communication modes, and decision making (Shenhar et al., 2001). Among others, an assertive and motivated culture ensures priority of team efforts, active engagement, and responsibility on the performance of a project.

According to the study, it was found that organizations with solid cultures that emphasize excellence and improvement problems achieve better project outcomes (Cooke-Davies & Arzymanow, 2003). Unlike in the case with those organizations which possess negative or dysfunctional culture, the challenge will involve areas like poor communication, resistance to change, and low employee engagement and as a consequence, the projects could run late and go over the budget.

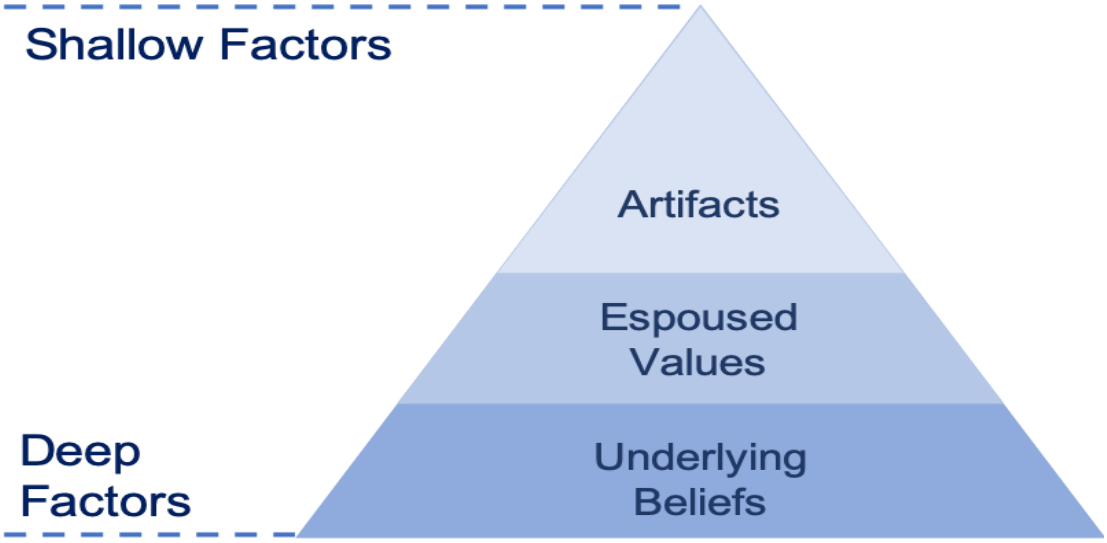
In that way, the organizational culture truly determines employees' behaviour and considerably affects project results. And a healthy culture with people awareness bears higher employee engagement, strengthens collaboration, and leads to increased success. Culture remains the core determinant of human conduct. For this reason, organizations have to understand how cultural aspects of behaviour influence performance outcomes. Then, they can create work environments that enhance employee satisfaction and project success.

2.4 Edgar Schein Organizational Culture Model

Schein’s model outlines a very complicated and multifaceted model of organizational culture which explains all the levels of depth and intricacy of the mechanism. Schein's conceptualization of organizational culture essentially contemplates a phenomenon where employees share a similar system of values, norms, and beliefs upon which their behaviour and choices depend (Schein, 1985). In contrast to models which usually touch only the thin layer of culture, Schein’s theory sensitizes us to the complex and often even unconscious dimensions of culture.

Edgar Schein’s Organizational Culture triangle suggests that there are different layers to the cultures within organizations. There are shallow layers that have some impact on an organizations culture or which may be some indication of what a culture is actually like. There are also deeper layers which provide a much greater insight into what a culture is actually like. These layers are Artefacts, Espoused Values and Underlying Assumption. They are of differing levels of importance in shaping the actual culture of an organization.

Figure 1: Edgar Schein Organizational culture



Source: The world of work project

Schein Edgar's culturally oriented work also defined the complexity of a culture that operates within organizations as well. Schein's (1985) model has revealed three levels of culture that vary between each but add to understanding the deeper dynamics that influence the organizational behaviour and character. This section delves into Schein's organizational culture model, and explore its components, applications as well as the contributions of the scholarly community onward.

2.4.1 Artefacts and Behaviours

The upper layer of Schein's model, which is visible manifestations of culture within an organization consists of artefacts and behaviours. These include tangible elements such as symbols, rituals, language, and physical structures that reflect the values, norms, and beliefs of the organization (Schein, 1985). Artefacts and behaviours serve as powerful symbols that communicate organizational identity and shape employee perceptions and experiences.

As per Schein (2010) this part of organizational culture is visible and fellable structures and processes. These are observed behaviours and difficult to decipher. The most important point to be made about this level of the culture is that it is both easy to observe and very difficult to decipher. observers can describe what they see and feel but cannot reconstruct from that alone what those things mean in the given group. Some culture analysts argue that among the artefacts, you find important symbols that reflect deep assumptions of the culture, but symbols are ambiguous, and you can only test a person's insight into what something may mean if the person has also experienced the culture at the deeper level of assumptions (Gagliardi,1990,1999).

Understanding organizational culture, solely on artefacts can be misleading and shallow. Our background may get in the way in understanding this. As an example we can say that an informal, loose organization might be seen as inefficient by someone valuing formality. In the contrary a formal organization might be seen as lacking creativity and innovation which is misapprehended. Therefore, to gain in depth understanding of the culture in a given organization it is important to engage with

employees or insiders, analyse the next level of organizational culture that is espoused values, norms and rules, principles and procedures guiding group behaviour, this approach leads to deep understanding of the culture prevailing in the given organization.

Many scholars have highlighted the importance of artefacts and behaviours in understanding organizational culture. Deal and Kennedy (1982) emphasize the role of artefacts in shaping organizational identity and reinforcing cultural norms. Similarly, Alvesson (2012) argues that artefacts serve as potent symbols that communicate organizational values and priorities to employees and external stakeholders. These manifestations can be observed and analysed to gain insights into the underlying cultural values and assumptions.

2.4.2 Espoused Values

The stated values and beliefs of the organization lie beneath the surface, reflecting its declared principles and guiding philosophies (Schein, 2004). Mission statements, vision statements, and organizational policies are official channels used to communicate these values. However, there may be discrepancies between these values and actual behaviour. Statements of principles guide actions, attitudes, and organizational procedures.

As per Schein espoused belief and values includes ideals, goals, values, aspirations, ideologies, relationships that may or may not be congruent with behaviour and other artefacts. The second layer of Schein's model focuses on espoused values, which represent the stated beliefs and norms that are promoted and communicated within the organization. Espoused values are often articulated in mission statements, vision statements, value statements, and other official documents. Espoused values can also be observed in the explicit messages communicated by leaders and managers. They reflect the ideals and aspirations of the organization and are intended to guide the behaviour and decision-making of employees. However, it is important to note that there can be a gap between espoused values and the actual behaviours exhibited within the organization.

Declared values play an important role in forming organizational culture and facilitating organizational transformation, according to Cameron and Quinn (2011) A unified and purpose-driven culture can be achieved by aligning stated values with organizational goals and objectives. Leadership is important for articulating and reinforcing stated values, according to Schein (2010).

Despite having best intentions organization often face challenges in bridging the gap between what they know they value and what their employees does. This could happen due to leadership behaviour which contradicts espoused values, incentives and rewards which are not in alignment with the organization values and organizational complexity based on geography and diverse functions.

2.4.3 Underlying Assumptions

At the deepest level of Schein's model lie underlying assumptions, which represent the deeply ingrained, unconscious beliefs that guide behaviour within the organization (Schein, 1985). These assumptions are often taken for granted and are rarely articulated explicitly, yet they exert a powerful influence on employee attitudes, perceptions, and actions. Being the deepest level of Schein's organizational culture model, underlying assumptions are the source of values in a culture and they are what trigger actions in the organization. Organizational assumptions are often believed to be known, but are not discussed, nor are they written or easily found. They are comprised of unconscious thoughts, beliefs, perceptions, and feelings (Schein, 2004).

As per Edgar Schein there are three dimensions that form the bedrock of an organizations culture:

- The nature of humans: this is about the belief about human nature; it reveals the belief about people weather they are good, selfish, or opportunistic. It also includes assumptions about human motivation, trustworthiness and potential drive or interactions
- Human relationships and activity: This answers the questions of how we perceive relationship work. It reveals weather human relationship and activities are transactional, collaborative, or hierarchical
- Reality and truth: this is about assumptions or perception about what is reality and truth, it is assumption of what is real and what is illusory. Assumptions about reality influence our decisions and judgments we take and how we behave in any setting.

Researchers have explored the role of underlying assumptions in shaping organizational culture and behaviour. Schein (1992) argues that understanding and challenging these underlying assumptions is essential for driving organizational change and transformation. Similarly, Argyris and Schön (1978) highlight the importance of uncovering and addressing the tacit beliefs and assumptions that underpin organizational practices and behaviours.

2.4.4 Role of Leadership in Shaping Culture

Leadership plays a pivotal role in shaping organizational culture, as leaders serve as architects and custodians of culture within the organization (Schein, 2016). Through their actions, decisions, and communication, leaders set themselves as a model for what is deemed acceptable and valued. Effective leaders articulate a clear vision, instil organizational values, and model desired behaviours.

In addition, leaders have the power to reinforce or challenge existing cultural norms, fostering opportunities for cultural change and transformation (Schein, 2010). Aligning their leadership approach with the organization's cultural aspirations, leaders can cultivate a culture conducive to innovation, collaboration, and excellence.

Edgar Schein's organizational culture model offers a comprehensive framework for understanding the complex dynamics of culture within organizations. Delineating the various layers of culture, from artefacts and behaviours to espoused values and underlying assumptions, Schein provides valuable insights into how culture shapes organizational identity, behaviour, and performance. It is important for leaders to understand and leverage these insights if they want to cultivate a positive and adaptive culture that drives organizational success.

2.5 Peter Senge Learning Organization Model

Peter Senge's ground-breaking work on the learning organization has significantly influenced organizational theory and practice, advocating for a paradigm shift towards organizations that prioritize continuous learning, innovation, and adaptation (Senge, 1990). In his seminal book "The Fifth Discipline," Senge outlines the core principles and disciplines that characterize a learning organization, offering valuable insights into how organizations can thrive in an ever-changing and complex environment. This section explores Senge's concept of the learning organization, its key components, implications, and scholarly contributions, drawing upon insights from multiple authors in the field.

Peter Senge's conceptualization of the learning organization revolutionized the understanding of organizational behaviour and effectiveness. Senge envisioned the learning organization as a dynamic entity capable of continuous adaptation, innovation, and learning in response to its ever-changing environment (Senge, 1990). Central to Senge's framework is the idea of a collective commitment to learning, which permeates all levels of the organization and drives its ability to thrive in complex and

uncertain conditions. The learning organization is characterized by several key attributes that contribute to its effectiveness:

Collective Commitment to Learning: At the heart of Senge's framework is the notion of a shared commitment to learning among all members of the organization (Senge, 1990). This collective commitment creates a culture where learning is valued, encouraged, and supported at every level.

Systems Thinking Approach: A hallmark of the learning organization is its systems thinking approach, which emphasizes the interconnectedness and interdependencies within the organization and its environment (Senge, 1990). This holistic perspective enables organizations to understand the broader context in which they operate and to identify leverage points for positive change.

Culture of Personal Mastery: Senge emphasizes the importance of personal mastery within the learning organization, whereby individuals continuously strive to develop their skills, capabilities, and potential (Senge, 1990). Personal mastery fosters a sense of empowerment, autonomy, and self-efficacy among employees, enabling them to contribute more effectively to the organization's goals.

Emphasis on Team Learning: In addition to individual learning, the learning organization places a strong emphasis on team learning (Senge, 1990). Teams are seen as the primary unit of learning within the organization, where collective intelligence is harnessed through open dialogue, collaboration, and knowledge sharing.

Senge's framework underscores the importance of fostering a culture of inquiry, dialogue, and reflection within the organization (Senge, 2006). This culture enables organizations to challenge conventional thinking, experiment with new ideas, and adapt to changing circumstances with agility and resilience.

Furthermore, Senge highlights the role of leadership in creating and sustaining a learning organization (Senge, 1990). Leaders are tasked with fostering a supportive learning environment, providing resources and opportunities for growth, and modelling the behaviours and attitudes associated with lifelong learning.

At the heart of Senge's concept is the notion of the learning organization, which he defines as an organization that fosters a culture of continuous learning, innovation, and adaptation (Senge, 1990). Unlike traditional organizations that focus primarily on efficiency and short-term results, learning organizations prioritize long-term success by investing in the development of their employees, fostering a climate of inquiry and experimentation, and embracing change as a natural part of the organizational journey.

Numerous scholars have echoed Senge's sentiments, emphasizing the importance of organizational learning in today's dynamic and uncertain business environment. Argyris and Schön (1978) argue that organizations must become "learning systems" capable of reflecting on their experiences, challenging prevailing assumptions, and adapting their behaviour in response to changing circumstances. Similarly, Garvin (1993) highlights the role of organizational learning in driving innovation, improving performance, and sustaining competitive advantage.

2.5.1 The Five Disciplines of the Learning Organization

Senge identifies five disciplines that characterize a learning organization, each playing a crucial role in enabling organizational learning and adaptation (Senge, 1990). These disciplines include:

2.5.1.1 Personal Mastery

According to Senge (1990), members of an organization are driven to constantly enhance their skills and expand their personal horizons. This pursuit of personal mastery encompasses several facets, including gaining clarity on one's goals and aspirations, concentrating efforts on areas that require development, and fostering the inner drive to excel in one's chosen domain. In essence, personal mastery entails a commitment to ongoing learning and self-improvement, empowering individuals to achieve excellence in their respective fields through dedicated practice and continuous refinement of their abilities.

2.5.1.2 Mental Models

Mental models are the deeply ingrained assumptions, beliefs, and perceptions that influence how individuals interpret and respond to their environment (Senge, 1990). In a learning organization, individuals are encouraged to challenge and revise their mental models to facilitate more effective decision-making and problem-solving. This encouragement stems from the recognition that challenging and refining mental models can lead to enhanced decision-making and problem-solving capabilities. By actively engaging in this process, individuals can broaden their perspectives, adapt more readily to changing circumstances, and contribute to the organization's overall learning and growth. Thus, fostering an environment where mental models are subject to scrutiny and evolution becomes imperative for facilitating continuous improvement and innovation within the organization.

2.5.1.3 Shared Vision

A shared vision provides a sense of purpose and direction, aligning the efforts of individuals towards common goals (Senge, 1990). In a learning organization, a shared vision fosters cohesion, commitment, and collective action. This shared vision not only delineates common objectives but also aligns the endeavours of individuals, fostering unity and collaboration towards overarching goals. Within this framework, a shared vision plays a pivotal role in nurturing cohesion among team members, instilling a deep-rooted commitment to the organization's mission, and catalysing concerted action. Moreover, by fostering a shared sense of purpose, a shared vision cultivates an environment where every member feels valued and empowered to contribute their unique talents and perspectives towards the collective vision. Consequently, in a learning organization, the cultivation of a shared vision becomes instrumental in promoting synergy, resilience, and sustained growth amidst dynamic and challenging environments.

2.5.1.4 Team Learning

Team learning emphasizes the importance of collaborative inquiry and dialogue (Senge, 1990). In a learning organization, teams leverage diverse perspectives and skills to generate innovative solutions and enhance collective intelligence. This approach encourages teams to harness the richness of diverse perspectives and skill sets, thereby facilitating the exploration of different viewpoints and the exchange of ideas. By actively engaging in dialogue and sharing insights, team members not only broaden their understanding of various concepts but also cultivate a culture of mutual learning and knowledge exchange. Furthermore, within the framework of team learning, diverse perspectives serve as catalysts for innovation, prompting teams to explore novel approaches and creative solutions to complex challenges. As teams tap into their collective intelligence, they are better equipped to navigate uncertainties and identify opportunities for improvement. Ultimately, in a learning organization, the emphasis on team learning fosters an environment where collaboration thrives, enabling teams to synergize their efforts and achieve greater outcomes than would be possible individually.

2.5.1.5 Systems Thinking

Systems thinking involves understanding the interrelationships and interdependencies within complex systems (Senge, 1990). In a learning organization, systems thinking enables individuals to perceive patterns, identify leverage points, and anticipate the unintended consequences of their actions.

Senge argues that organizations that cultivate these disciplines can enhance their capacity to adapt to change, innovate, and achieve their goals effectively. By fostering a culture of learning and inquiry, organizations can empower their employees to navigate uncertainty, seize opportunities, and drive continuous improvement.

2.5.2 Importance of Learning Organization in Project Management

The concept of the learning organization has profound implications for project management, particularly in dynamic and uncertain environments. Research has shown that organizations that embrace a learning orientation are better equipped to adapt to change, innovate, and achieve project success (Argyris, 1999). Learning organizations foster a culture of continuous improvement, knowledge sharing, and experimentation, enabling project teams to learn from past experiences and apply insights to future projects (Garvin, 1993). Moreover, learning organizations are more resilient in the face of unexpected challenges, as they possess the agility and flexibility to adjust their strategies and approaches as needed (Senge, 1990).

2.5.3 Linkage between Learning Organization and Organizational Culture

The concept of the learning organization is closely intertwined with organizational culture. Research has shown that organizational culture plays a critical role in shaping the conditions conducive to learning and innovation (Schein, 2010). Learning organizations cultivate a culture that values curiosity, inquiry, and experimentation, providing psychological safety and support for risk-taking (Edmondson, 1999). Moreover, organizational culture influences the extent to which the five disciplines of the learning organization are embraced and practiced (Senge, 1990). Organizations with a strong learning culture are more likely to sustain their efforts to become learning organizations over the long term (Garvin, 1993).

2.5.4 Implications and Contributions

Senge's concept of the learning organization has profound implications for organizational theory and practice. It challenges traditional notions of organizational structure and management, advocating for a more holistic and adaptive approach to organizational development. Scholars such as Nonaka and Takeuchi (1995) have expanded upon Senge's work, exploring the role of knowledge creation and innovation in organizational learning. Additionally, researchers such as Garvin (1993) and Senge himself (1990) have highlighted the importance of leadership in fostering a culture of learning and continuous improvement within organizations.

In summary, Peter Senge's concept of the learning organization offers valuable insights into how organizations can thrive in today's complex and dynamic business environment. By prioritizing continuous learning, innovation, and adaptation, organizations can enhance their capacity to navigate change, drive performance, and achieve sustainable success. Understanding and embracing the principles of the learning organization is essential for organizational leaders and managers seeking to build agile, resilient, and future-ready organizations.

2.6 Project Performance

Project performance stands as a cornerstone of organizational success, reflecting the degree to which a project meets its objectives within the confines of time, cost, and quality. This section delves into the

multifaceted nature of project performance, exploring its definitions, determinants, and implications for organizational competitiveness. Drawing upon insights from multiple authors in the field, we uncover the pivotal role of project management practices, team dynamics, and organizational culture in shaping project performance outcomes.

Project performance encompasses the ability of a project to achieve its predefined objectives within the allocated resources and constraints, including time, cost, and quality (Kerzner, 2017). It serves as a critical measure of the effectiveness and efficiency of project execution, reflecting the degree to which project deliverables meet stakeholder expectations and requirements. Effective project performance is essential for organizational success, as it directly impacts organizational profitability, reputation, and competitiveness in the marketplace.

Numerous factors influence project performance outcomes, ranging from project management practices to team dynamics and organizational culture. Kerzner (2017) highlights the importance of effective project management in driving project success, emphasizing the need for clear objectives, meticulous planning, and proactive risk management. Additionally, research by Turner and Müller (2005) underscores the role of team dynamics in shaping project performance, highlighting the significance of teamwork, communication, and collaboration in achieving project goals.

Organizational culture also emerges as a critical determinant of project performance, influencing the attitudes, behaviours, and decision-making processes of project teams (Schein, 1985). According to Cameron and Quinn (2011), organizations with strong and adaptive cultures are better equipped to support project success by fostering a climate of trust, innovation, and collaboration. Conversely, organizations with dysfunctional cultures may experience project delays, conflicts, and inefficiencies that hinder project performance outcomes.

Effective project performance is essential for maintaining organizational competitiveness and viability in today's dynamic business environment. Research by Pinto and Slevin (1987) suggests that organizations with a track record of successful project delivery are better positioned to attract clients, secure contracts, and differentiate themselves from competitors. Moreover, organizations that excel in project performance demonstrate a commitment to excellence, innovation, and customer satisfaction, enhancing their reputation and market standing.

2.7 Review of Empirical studies

Using Competing values framework (CVF) of organizational culture Ackon, F et al (2022) studied the influence of organizational culture on project planning. Their study found that Market culture significantly influences project planning more than the other culture types in the model. Though the study does not directly study effect of organization culture on project performance, project planning is one of the elements of a project and effective planning is directly related with project success. However, there is a draw back in CVF organizational model, one is it simplifies organizational culture concepts in to discrete categories (e.g clan, adhocracy, market and hierarchy), which may oversimplify the nuanced nature of culture within organizations. (Robbins, 2018) in addition provides limited prescriptive guidance on how to change or shape culture effectively to align with organizational goals.

Inim Victor E. (2009) Found that there is significant relationship between organizational culture and project success. It recommended that every organization to identify the culture that is beneficial to its operations that will help towards achievement of stated goals. Due to unique nature of the aviation sector, this study may not be applied to the aviation sector.

Study by Dev Gad Wanga Ochiel et al (2017) found that diversity, communication, and leadership influence project performance. The study established that diversity influences project performance. Many studies suggest that a project team should consist of a diverse team, however diversity alone may not be predicting project success.

Study by Jafari et al. (2012) on the impact of organizational culture on project management success, particularly focusing on risk management, revealed the significant role organizational culture plays in shaping risk management strategies hence affecting project outcomes.

Cooke-Davies (2002) identified organizational support and commitment as critical factors for project success, emphasizing the importance of fostering a positive organizational culture. Besner and Hobbs (2006) explored the perceived value of project management practices, suggesting that organizational culture influences the effectiveness of these practices and, by extension, project performance.

When they studied the influence of organizational culture on safety outcomes in aviation maintenance, Shappell et al. (2000) observed the aviation field. Although their focus was not predominantly on project performance, these authors indicated that even in terms of safety, proper corporate culture can still have a bearing on project execution.

In their research work O'Connell and Cuthill (2009), explored about organizational culture, leadership, and performance in an aviation perspective. While not directly connected to project performance, their study shed light on how organizational culture and leadership practices can affect overall organization effectiveness which could be transferred to project performance in airlines.

Shenhar et al. (2001) conducted multidimensional analyses of project success, and their studies showed that there is an increased level of project success dimensions. They indicated that organizations with a strong learning orientation are likely to attain higher success. Similarly, Ika et al. (2012) also found out that organizational learning is a core factor determining the success of projects, and this is seen in World Bank projects.

Moreover, Lim and Mohamed (1999) revisited project success criteria and established that learning organizations can achieve project objectives and achieve sustainable results. This has been used as evidence that promoting a learning organization in the environment can increase project outcomes, such as performance, innovation, and flexibility.

Senge's learning organization as a systems approach to continuous learning and innovation was addressed by Müller and Turner (2007) and Kivilä et al. They have studied the effectiveness of leadership style orientation to learning over project length types. Both studies note the necessity of adjusting the leadership style to promote a learning environment within project teams.

Shenhar et al. (2001) and Ika et al. (2012) emphasized the critical role of organizational learning in project success. Their studies employed rigorous sampling methods to collect data from organizations across various sectors, contributing valuable insights into the importance of fostering a learning culture within project teams. However, further research is needed to elucidate the specific mechanisms through which learning organizations influence project success and to develop strategies for promoting a learning culture within project teams

Müller and Turner (2007) examined the effect of learning organization principles on project performance. Utilizing a qualitative research design with semi-structured interviews, they found that organizations with a strong learning orientation tended to achieve higher project success rates. However,

the specific mechanisms through which learning organizations influence project success were not fully elucidated, indicating a gap in understanding the underlying processes. In terms of sampling methods, Müller and Turner (2007) employed purposive sampling to select participants with diverse experiences in project management, ensuring representation across different

Garcia and Chen (2021) employed a mixed-methods approach, combining quantitative surveys with qualitative interviews to gather data on learning organization characteristics, project complexity, and project performance outcomes. Their sampling method involved purposive selection of projects across different industries and sectors to ensure representation of diverse organizational contexts and project types. Garcia and Chen (2021) utilized a mixed-methods approach, integrating quantitative surveys and qualitative interviews, to investigate the relationship between learning organization characteristics, project complexity, and project performance outcomes. Through structured surveys, they gathered data on learning organization traits, project complexity factors, and project performance indicators from project teams across diverse industries. Simultaneously, qualitative interviews provided deeper insights into organizational dynamics and subjective experiences related to learning and project performance. Employing a purposive sampling method, they ensured the inclusion of projects from various sectors, enhancing the breadth and applicability of their findings. This methodological rigor facilitated a comprehensive exploration of how learning organization principles intersect with project complexity to influence project success, contributing valuable insights to project management theory and practice.

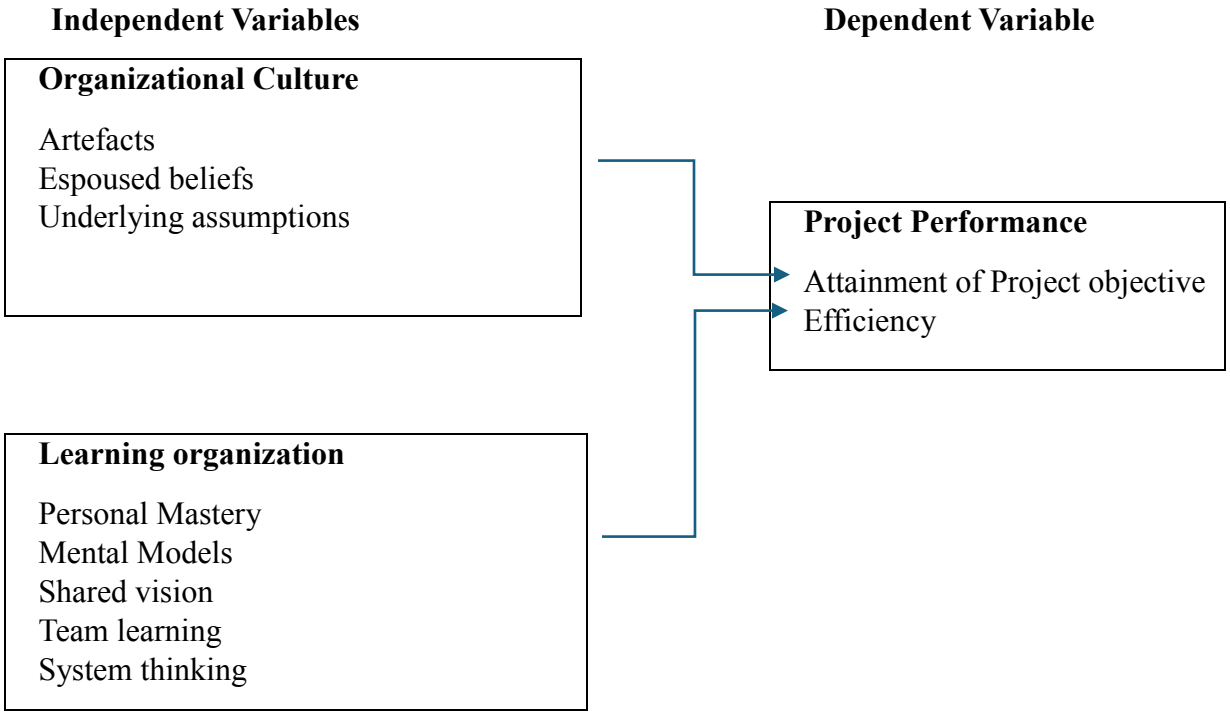
Though there is limited studies that directly addresses organizational culture in aviation sector, insights, insights from these studies shed light on broader organizational dynamics likely to affect project outcomes. The empirical evidence underscores the importance of learning organizations in project management, suggesting that organizations prioritizing continuous learning and collaboration are better positioned for success in today's dynamic business environment. Further research could focus on identifying specific mechanisms through which learning organizations influence project success and developing strategies for promoting a learning culture within project teams.

2.8 Conceptual Framework

A conceptual framework can be developed to illustrate how the various components of organizational culture and learning organization interact to influence project outcomes.

This conceptual framework seeks to examine the intersection between Edgar Schein's organizational culture model and Peter Senge's learning organization concept, examining their combined effect on project performance.

Figure 2: Conceptual Framework



Source: Own-developed

Based on review of literatures on the study, the Hypotheses is formulated on the proposed relationships between organizational culture, learning organization principles, and project performance.

H1: Artefacts and behaviours has a significant and positive effect on project performance.

H2: Espoused values has a significant and positive effect on project performance.

H3: Underlying assumptions has a significant and positive effect on project performance.

H4: Personal mastery has a significant and positive effect on project performance.

H5: Mental models has a significant and positive effect on project performance.

H6: Shared vision has a significant and positive effect on project performance.

H7: Team learning has a significant and positive effect on project performance.

H8: Systems thinking has a significant and positive effect on Project performance.

CHAPTER THREE

3 RESEARCH METHODOLOGY

In this study quantitative approach research design is used as this approach helps in objective approach to collecting, analysing and interpreting numerical data. In this study correlation and regression analysis as a statistical tool was used. Regression analysis enables the modelling of the effect of independent variables on the dependent variable.

3.1 Research Approach and Design

This study adopted a quantitative, cross-sectional approach to investigate the effect between the variables. This approach involves collecting data from a diverse sample of participants at a single point in time.

The quantitative methods involve gathering numerical data through surveys questioners. According to Jones and Brown (2017), the quantitative approach entails the collection of numerical data through the distribution of online surveys using platforms such as Google Forms. By utilizing this method, researchers can capture direct perceptions and experiences of the respondents regarding the topic under investigation. Online surveys are an effective means of efficiently gathering large amounts of data in a convenient and accessible manner (Smith & Johnson, 2018).

The qualitative aspect of the research process is done through collection of subjective data using various means, including interviews, focus groups, and open-ended survey questions (Smith et al. 2018). By embracing this approach, researchers can delve deeper into participants' perspectives, experiences, and opinions concerning the impact of organizational culture on project performance and the integration of specific models. Moreover, qualitative data analysis methods, such as thematic analysis, enable researchers to identify recurring themes, patterns, and valuable insights from the qualitative data (Johnson & Christensen, 2019). In this study quantitative approach is used with survey question indicated Annex I.

This study used explanatory research design which is suitable for this specific study as it aims to explain and understand the effect between organizational culture and project performance in the context of integrating the specific models mentioned. This allows for an in-depth explanation of the subject matter, generation of insights, and the identification of potential patterns or trends.

Descriptive analysis is employed to summarize the characteristics of the sample and variables under investigation. Correlation analysis explores the relationships between different variables, identifying any associations or patterns present in the data. Regression analysis is used to examine the predictive relationship between independent and dependent variables, allowing for the identification of factors that may influence the outcome of interest. This comprehensive research design aims to provide valuable insights into the relationships between key variables and contribute to a deeper understanding of the research phenomenon.

3.2 Sampling Technique and Target Population

3.2.1 Target Population

In this study the target population comprise all employees, management members, project teams, project managers and project management office including all employees under CIO division of Ethiopian airlines as the study focuses on IT projects in Ethiopian airlines.

The target population in this study equalled to 278 employees including the CIO and all employees under the Information officer division of Ethiopian airlines.

3.2.2 Sampling Technique and Sample Size

A sampling frame is a specific list, database or other detailed source that serves as the basis for selecting a sample in a research study. It provides a practical means of identifying and accessing potential participants or elements from a larger population of interest (Adèr & Mellenbergh, 2008).

Table 1: Sample Frame

Ethiopian Airlines CIO division staff	
Function	**Number of Employee**
CIO(excluded from the sample frame)	1
Group IT Application Design & Delivery	70
Group IT Infrastructure Design & Delivery	31
Group IT Services Operation	150
Group IT Security & Compliances	26
Total	278

Source: HRM system generated

The researcher employed Yamane's (1967) formula to determine the appropriate sample size. This is commonly used formula for determining the sample size from a population for a survey. This formula uses a finite population correction factor and a standard error to calculate the required sample size.

The formula for Yamane's sample size is as follows:

n = N / (1 + N (e)^2)

Where:

n = sample size required

N = population size

e = desired level of precision (as a decimal)

n= 277/(1+278(0.05^2)

n=163.83≈ 164.00

Thus Sample size for the study was 164

The researcher used purposive sampling; purposive sampling is used to select respondents that are most likely to yield appropriate and useful information (Kelly,2010)

3.3 Data Source and Method of Data Collection

3.3.1 Source of Data

The study used both primary and secondary data to gather the required information to meet its objectives. Primary data are collected by conducting interviews with relevant persons to the study including experts, practitioners, or key informants to enable in depth understanding of the subject being studied. Secondary data is collected through review relevant literatures, available databases, reports, historical records and organizational data in its portal.

3.3.2 Data Collection

Data was collected through online questioners using google forms, then the data collected was exported to Excel and then SPSS. SPSS is capable of producing diverse types of statistical analyses and outputs like descriptive statistics, including measures of central tendency (such as mean, median, and mode), measures of dispersion (such as standard deviation and range), and frequency distributions. It enables the execution of various inferential statistical tests, such as t-tests, ANOVA, regression analysis, chi-square tests, and factor analysis. Consequently, it empowers researchers to explore relationships between variables and test hypotheses.

3.4 Measurement

The researcher developed the research survey questionnaires in way to answer the research questions and meet the study objectives. The questionnaires are derived from Organizational culture model of Schein, E. H. (1985) and learning organization concept of Senge, P. M. (1990). The questions are developed using the three dimensions of organizational culture of Artefacts, Espoused values and underlying assumptions. And also the five elements of learning organization concept of Personal Mastery, Mental Models, Shared Vision, Team Learning and System Thinking used to develop the questions.

The last part of the questionnaire is developed to show the independent variable of Project performance. The questions are developed using measures of project performances in relation to budget, quality, schedule and meeting stakeholder expectations.

The questions were measured using the Five-point likert scale, ranging from 1=Strongly Disagree, 2=Disagree,3= Neutral, 2= Agree, and 1= Strongly Agree.

3.5 Method of Data Analysis

The study uses descriptive analysis to understand mean and standard deviation of the respondent data to see rating of the constructs by respondents, regression analysis to model the effect of independent variables on dependent variable, with organizational culture serving as the independent variable and project performance as the dependent variable and to effectively determine the degree to which organizational culture influences project performance. Correlation coefficient analysis to measure the strength and direction of the relationship between two continuous variables. It helps identify whether and how much two variables are related.

3.6 Scale Reliability and Validity

3.6.1 Reliability

Reliability refers to the consistency or stability of a research measure or instrument. It involves the extent to which the measure produces consistent results when the same phenomenon is repeatedly measured under the same conditions (Bryman & Bell, 2019, p. 44).

In this study, Cronbach's alpha coefficient is used to measure internal consistency. It is used to assess the extent to which a set of items or variables in a measure or scale are consistently measuring the same construct or concept.

Assessing reliability in research instruments involves evaluating internal consistency. Internal consistency measures the extent to which items within a scale or questionnaire consistently measure the same construct. One commonly used measure of internal consistency is Cronbach's alpha, which quantifies the average correlation between all items in the instrument. Higher values of Cronbach's alpha (typically above 0.70) generally considered acceptable, suggesting that the items are reliably measuring the intended construct (Smith & Jones, 2015). In this study the value of Cronbach's alpha for the variables is summarized in the below table. Cronbach's alpha, also known as tau-equivalent reliability or coefficient alpha, is a statistical measure used to assess the internal consistency or reliability of a set of survey items or test scores. Here are the key points about Cronbach's alpha:

High Alpha (Close to 1): Indicates strong agreement or consistency among the items. It implies that the items effectively measure the same underlying construct and desirable for reliable scales or instruments.

Moderate Alpha (Around 0.7 to 0.8): Suggests reasonable internal consistency and acceptable for most research purposes.

Low Alpha (Below 0.7): Indicates poor agreement among items and raises concerns about the reliability of the scale. It may require revising or removing problematic items.

Table 2: Reliability Test Result

Reliability test		
Variables	**Cronbach's Alpha**	**No. of Items**
Project Performance	0.702	4
Artifacts and Behaviors	0.782	4
Espoused values	0.838	4
Underlying assumptions	0.857	4
Personal Mastery	0.953	3
Mental Modes	0.722	3
Shared Vision	0.894	3
Team Learning	0.838	3
Systems Thinking	0.892	3

Source: Survey data (2024)

As shown in the above table, Personal mastery has the highest point showing strong internal consistency and the rest variables shows Cronbach alpha result between 0.7 and 0.9 showing acceptable and reasonable internal consistency.

3.6.2 Validity

Validity refers to the extent to which the research design accurately measures the concept it intends to study. It ensures that the findings and conclusions drawn from the research are accurate, reliable, and can be generalized to a larger population or context. To ensure this the questionnaire used in this study adequately cover the relevant aspects of organizational culture and project performance as related to the learning organization model.

3.7 Model Specification

Regression model includes both organizational culture and learning organization variables. Specifically, we consider artefacts and behaviour, espoused values, underlying assumptions, personal mastery, mental models, shared vision, team learning, and systems thinking. The constant term represents the baseline project performance, while the coefficients quantify the impact of each variable. Since there are two sets of independent variable the shared constant term is used in the below formula.

$$Y= \beta0+ \beta1X1+ \beta2X2+ \beta3X3+ \beta4X4+ \beta5X5+ \beta6X6+ \beta7X7+ \beta8+X8+e$$

Where:

Y= Project Performance

β0: constant term

X1: Artefacts and Behaviour

X2: Espoused Values

X3: Underlying Assumptions

X4: Personal Mastery

X5: Mental Models

X6: Shared Vision

X7: Team Learning

X8: Systems Thinking

β1= Coefficient of Artefacts and Behaviour

β2= Coefficient of Espoused Values

β3= Coefficient of Underlying assumptions

β4= Coefficient of Personal mastery
β5= Coefficient of Mental models

β6= Coefficient of Shared vision
β7= Coefficient of Team learning
β8= Coefficient of Systems thinking
e= Error term

CHAPTER FOUR

4 DATA PRESENTATION, ANALYSIS, AND INTERPRETATION

In this chapter, analysis and interpretation of the data collected through questioners was presented. Response rate, instrumental reliability, descriptive analysis, and inferential statistics analysis was discussed.

4.1 Response Rate

Response rate is an important indicator of the quality and reliability of study findings (Johnson, 2015). It refers to the ratio of sampled individuals who actually respond to a survey, providing valuable data for analysis. A high response rate enhances the representativeness of the sample and reduces the risk of non-response bias. On the other hand, a low response rate can compromise the validity and generalizability of survey results, leading to potential uncertainties and limitations in drawing conclusions from the data. Researchers endeavour to maximize response rates through various strategies including personalized invitations, multiple contact attempts, and incentives to encourage participation (Brown, 2020). In various research fields, response rates exceeding 60% are generally considered as acceptable (Johnson, 2015). Ideally, researchers aim for even higher rates, ideally surpassing 70% or 80%, to boost confidence in sample representativeness and minimize non-response bias (Smith & Jones, 2018). Achieving such high response rates is essential for generating robust and trustworthy data that can support valid conclusions and generalizations from survey findings.

4.2 Descriptive analysis

4.2.1 Profile of respondent

In this section the Biographic information of the respondent of the research survey is presented by gender, age, level of education and current position. The below table shows this information in a summery.

Table 3: Respondent Profile

Gender		
	N	%
Female	23	15.5%
Male	125	84.5%
Age group		
	N	%
20-30 years	67	45.3%
31-40 years	81	54.7%
Educational level		
	N	%
Bachelor	122	82.4%
Masters	26	17.6%
Current Position in the organization		
	N	%
Manager	9	6.1%
Team Leader	25	16.9%
Expert	35	23.6%
Other	79	53.4%
Work experience		
	N	%
Less one year	18	12.2%
1-3 year	7	4.7%
3-5 year	11	7.4%
above 5 years	112	75.7%

Source: Survey data (2024)

The data provided summarizes key demographic and professional characteristics of a sample group. The majority of respondents were male (84.5%) compared to females (15.5%). In terms of age distribution, a higher proportion fell within the 31-40 years' category (54.7%) compared to the 20-30 years' group (45.3%). Educational level varied, with bachelor's degree holders comprising the largest portion of the respondents (82.4%) followed by those with master's degrees (17.6%). Regarding current positions within the organization, the majority of respondents held positions below Expert level holding 53.4%, while smaller proportions held roles such as Experts (23.6%), Team Leaders (16.9%), or Managers (6.1%). In terms of work experience, a significant majority reported having over 5 years of experience (75.70%), with respondents having less than one year (12.20%), between 1-3 years and 3-5 years of experience (4.7%) & (7.4%) respectively.

The demographic data summarized above have implication and effect on the study. As shown above male respondents hold the majority of respondents and this might lead to gender related differences. Educational background impact how individuals perceive and engage with organizational culture and

learning opportunities. As shown above all respondents are bachelor degree and masters holders. When position in the organization is seen the respondents hold different roles within the organization and this may interact with culture and learning practices distinctively. Managers, team leaders, and experts may have varying expectations and responsibilities related to project success. Work experience also influences how individuals perceive organizational culture and adapt to learning initiatives. In this study more than 75% of the respondents have Five years and above experience. Long-term employees may have deeper cultural integration, while newer employees might be more receptive to learning practices

4.2.2 Descriptive analysis of Organizational culture and Learning organization

4.2.2.1 Descriptive analysis of Organizational Culture

The organizational culture section consisted of 12 questions presented in a Likert-style format with a five-point rating scale which consists of Strongly Disagree, Disagree, Neutral, Agree and Strongly Agree. The respondents were asked to indicate the degree to which they agreed or disagreed with the statement. The measuring and scaling purpose "Strongly Disagree" represent 1, "Disagree" represent 2 point, "Neutral" represent 3 points, "Agree" represent 4 points and "Strongly Agree" has 5 points.

Table 4: Descriptive Statistics of Organizational Culture

Descriptive Statistics			
	N	Mean	Std. Deviation
Artifacts and Behaviors	148	3.9409	0.59431
Espoused values	148	3.9459	0.46615
Underlying assumptions	148	4.0304	0.50919

Source: Survey data (2024)

From the first category of the independent variables, the mean value of underlying assumptions is 4.0304; showing it has the highest average rating among respondents. This indicates that Ethiopian Airlines has relatively strong understanding of core belief on how things should be done, what is wrong and right and what is valued. It also indicates the assumption on human nature encourages team collaboration, encourages learning and innovation, contributes team resilience and accountability, and supports effective planning.

Underlying assumptions is followed by espoused values with mean value of 3.9459. Espoused values represent aspirations and ideals that organizations strive to uphold; they are what an organization stands for and what guides its decisions and actions.

The last variable in this category is Artefacts and Behaviours with mean value of 4.0456 indicating that Ethiopian Airlines has a good process, workplace appearance and standards, rituals and meetings, effective communication of its values and missions and consistency in stated value and actual practise.

As per the study on the effect of organizational culture on organization performance of Public universities in Kenya by Dr. Johnmark Oburu conducted in 2018, the descriptive analysis shows almost the same outcome to with this study. Espoused values are highly rated (M=3.77, SD=0.63), Artefacts (M=3.30, SD 0.83) Cultural assumptions (M=3.37, SD0.79). However, in my study underlying assumptions got high response rate.

4.2.2.2 Descriptive Analysis of Leaning Organization

The learning organization section consisted of 15 questions categorized with five variables and presented in a Likert-style format with a five-point rating scale which consists of Strongly Disagree, Disagree, Neutral, Agree and Strongly Agree. The respondents were asked to indicate the degree to which they agreed or disagreed with the statement. The measuring and scaling purpose "Strongly Disagree" represent 1, "Disagree" represent 2 points, "Neutral" represent 3 points, "Agree" represent 4 points and "Strongly Agree" has 5 points.

Table 5: Descriptive Statistics of Learning Organization

Descriptive Statistics			
	N	Mean	Std. Deviation
Personal Mastery	148	3.8401	0.83704
Mental Modes	148	3.9617	0.52240
Shared Vision	148	3.9144	0.82490
Team Learning	148	4.0428	0.57048
Systems Thinking	148	3.8784	0.64611

Source: Survey data (2024)

In this category Team learning has the highest mean value of 4.0428 having the highest average rating of respondents. This shows that there is effective collective learning, knowledge sharing, application of lesson learning from team learning activities.

Shared vision has mean value of 3.9144 though the second rated still shows the employees of the organization has shared vision. This indicated the organization clear and inspiring vision, well aligned project goals with strategic vision and direction.

Mental models follow Team leaning having the second highest mean value of 3.9617 showing there is regular knowledge and insights sharing, performance reflection and adjustment and self-development.

Systems thinking having mean value of 3.8784 is still above average and indicates there is implementation of system thinking in the organization. It suggests that there is understanding of interconnectedness of project elements, understanding of broader impacts decisions and good practice of problem solving.

The last variable having the least mean value is Personal Mastery with 3.8401. Though having the least variable it still has above average rating hence it indicates the organization encourages continuous learning, avail learning opportunities and empower employees to achieve their personal mastery.

4.2.3 Descriptive Analysis of Project Performance

Table 6: Descriptive Statistics Project Performance

Descriptive Statistics			
	N	Mean	Std. Deviation
Project Performance	148	3.7703	0.42410

Source: Survey data (2024)

The mean value of project performance as indicated on the above table is 3.7703. The mean value suggests that on average respondents rating tend to lean towards the higher end of the scale showing positive project performance in Ethiopian Airlines IT projects. The standard deviation is 0.42410 indicates there is moderate variability in the responses however it is not very high showing relatively consistent responses among the respondents.

4.3 Inferential statistics results analysis

4.3.1 Correlations analysis

Table 7: Correlation Analysis result

Correlations

		PP	AB	UA	PM	SV	TL	ST	MD	EV
AB	Pearson Correlation	.524**	1							
	Sig. (2-tailed)	0								
	N	148	148							
UA	Pearson Correlation	.448**	.536**	1						
	Sig. (2-tailed)	0	0							
	N	148	148	148						
PM	Pearson Correlation	.453**	.801**	.387**	1					
	Sig. (2-tailed)	0	0	0						
	N	148	148	148	148					
SV	Pearson Correlation	.376**	.496**	.448**	.338**	1				
	Sig. (2-tailed)	0	0	0	0					

	N	148	148	148	148	148				
TL	Pearson Correlation	.395**	.444**	.821**	.404**	.549**	1			
	Sig. (2-tailed)	0	0	0	0	0				
	N	148	148	148	148	148	148			
ST	Pearson Correlation	.446**	.542**	.740**	.306**	.706**	.634**	1		
	Sig. (2-tailed)	0	0	0	0	0	0			
	N	148	148	148	148	148	148	148		
MD	Pearson Correlation	.280**	.435**	.671**	.584**	.420**	.782**	.430**	1	
	Sig. (2-tailed)	0.001	0	0	0	0	0	0		
	N	148	148	148	148	148	148	148	148	
EV	Pearson Correlation	0.144	-0.045	-0.03	-0.016	0.046	-0.01	-0.025	0.003	1
	Sig. (2-tailed)	0.08	0.587	0.73	0.848	0.579	0.91	0.764	0.97	
	N	148	148	148	148	148	148	148	148	148

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

Source: Survey data (2024)

Where:

PP = Project Performance

AB= Artefacts and behaviors

UA= Underlying assumptions

PM= Personal mastery

SV= Shared Vision

TL=Team Learning

ST=Systems thinking

MD=Mental Models

EV=Espoused values

The correlation coefficient between Project Performance and Artefacts and Behaviors is 0.524 which suggests moderately strong relationship between the variables analyzed. The meaning is when one

variable increases the other tend to increase also. The correlation coefficient is statically significant with a P-value of 0.000 meaning it's unlikely it occurred by chance. This also shows high confidence on observed correlations.

The correlation coefficient between Project Performance and Espoused Values is 0.144 which suggests a very weak linear relation between the two variables. e p-value associated with the correlation coefficient is 0.080 for both variables. This indicates the probability of observing such a correlation coefficient by random chance, assuming that there is no true relationship between the variables in the population

The correlation coefficient between Project Performance and Underlying Assumptions is 0.448 which suggests moderate relationship between the variables analyzed. The meaning is when one variable increases the other tend to increase also. The correlation coefficient is statically significant with a P-value of 0.000 meaning it's unlikely it occurred by chance. This also shows high confidence on observed correlations.

The correlation coefficient between Project Performance and Personal Mastery is 0.453 which suggests moderate relationship between the variables analyzed. The meaning is when one variable increases the other tend to increase also. The correlation coefficient is statically significant with a P-value of 0.000 meaning it's unlikely it occurred by chance. This also shows high confidence on observed correlations.

The correlation coefficient between Project Performance and Mental Models is 0.280 which suggests a weak relationship between the variables analyzed. The meaning is when one variable increases the other tend to increase also. The correlation coefficient is statically significant with a P-value of 0.001 meaning it's unlikely it occurred by chance. This also shows high confidence on observed correlations.

The correlation coefficient between Project Performance and Shared Vision 0.376 which suggests moderate correlation relationship between the variables analyzed. The meaning is when one variable increases the other tend to increase also. The correlation coefficient is statically significant with a P-value of 0.000 meaning it's unlikely it occurred by chance. This also shows high confidence on observed correlations.

The correlation coefficient between Project Performance and Team Learning is 0.395 which suggests moderate relationship between the variables analyzed. The meaning is when one variable increases the other tend to increase also. The correlation coefficient is statically significant with a P-value of 0.000 meaning it's unlikely it occurred by chance. This also shows high confidence on observed correlations.

The correlation coefficient between Project Performance and Systems Thinking is 0.446 which suggests moderate relationship between the variables analyzed. The meaning is when one variable increases the other tend to increase also. The correlation coefficient is statically significant with a P-value of 0.000 meaning it's unlikely it occurred by chance. This also shows high confidence on observed correlations.

4.3.2 Regression analysis

Regression analysis is a set of statistical methods used for the estimation of relationships between a dependent variable and one or more independent variables. It can be utilized to assess the strength of the relationship between variables and for modelling the relationship between them.

4.3.1.2 Multiple linear regression assumptions

The must be Linear relationship between dependent variables and the independent variables. This linear relationship is measured by scatter plots. As it seen on the figure below the point closely follow a straight-line path indicating a good positive correlation between Project Performance and the selected independent variables.

Figure 3: Normal P-P Plot of regression standardized Residual.

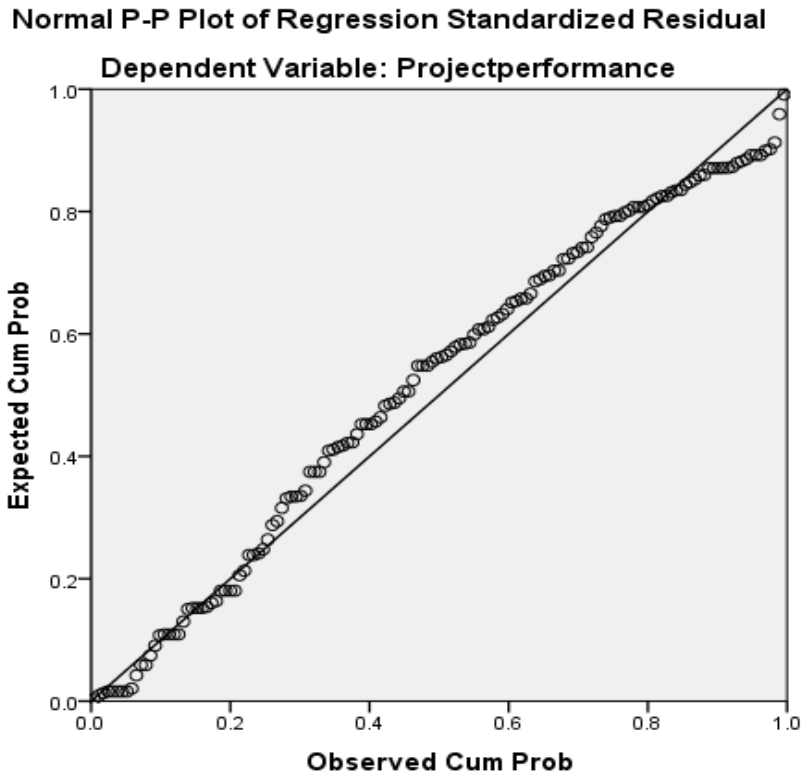
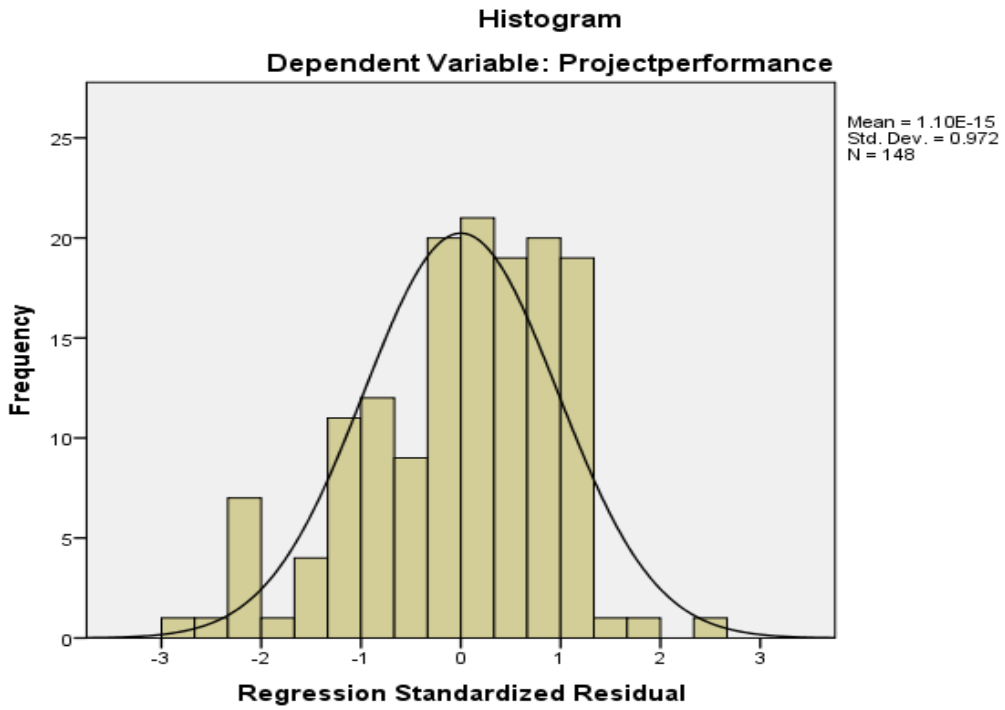


Figure 4: Histogram



Source: Survey data (2024)

Normal distribution or normality is tested to check weather a sample data has been drawn from a normally distributed population. The histogram Mean of 2.01 suggests that the data tends to be centered at that value. The standard deviation indicates that the spread or variability of the data points around the mean. A smaller standard deviation indicates the data points are close to the mean. Whereas larger standard deviation mean the data points are spread-out. In the figure below the standard deviation of is 0.972 is considered relatively small.

Table 8: Model Summery

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.625[a]	.390	.355	.34061

a. Predictors: (Constant), Mental Models, Espoused value, Shared Vision, Artifacts and Behaviors, Underlying Assumptions, Systems thinking, Personal Mastery, Team Learning

b. Dependent Variable: Project Performance

Source: Survey data (2024)

R-square value of 0.390 indicates that around 39% of the variability in the dependent variable accounted for by the independent variables included in the model. The R Square value of 0.39 suggests that a substantial portion of the variability in project performance is explained by the predictor variables included in the model. This indicates that organizational culture and learning organization factors have a

significant impact on project performance within the context of the study. The Adjusted R Square value of 0.355 suggests that the model's explanatory power remains relatively high even after adjusting for the number of predictors, indicating that the model is not overfitting.

Table 9: ANOVA

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	10.314	8	1.289	11.113	.000[b]
	Residual	16.126	139	.116		
	Total	26.439	147			

a. Dependent Variable: Project Performance

b. Predictors: (Constant), Mental Models, Espoused value, shared vision, Artifacts and behaviors, Underlying assumptions, Systems thinking, Personal mastery, Team learning

Source: Survey data (2024)

Analysis of variance (ANOVA) is a statistical test used to evaluate the difference between the means of more than two groups. ANOVA test used to determine independent variable's (Artefacts and behaviours, Espoused values, Underlying assumptions, Personal mastery, Mental Models, Shared Vision, and Team learning) significantly predict the dependent variable (Project Performance). There are 7 predictor variables plus a constant term and the mean square for the regression model is 1.508, the significance level for the regression model is $p<.001$. The mean square for the regression model (1.508) indicates the variability in Project Performance that can be explained by the predictors. The total variability in the data is 26.439, with the variables included in the regression model explaining a significant portion (45.61%) of this variability. The F-test statistic of 14.576 indicates that the model is statistically significant and at least one predictor significantly impacts Project Performance. Furthermore, the significant level of $p<.001$ is statistically significant so we can reject the null hypothesis. Overall, the results suggest that the model incorporating these predictor variables is effective in explaining variations in Project Performance.

Table 10: Coefficients of Organizational Culture and Project Performance

Coefficients

Model	Unstandardized Coefficients	Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B

		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	1.237	.348		3.552	.001	.549	1.925
	Artifacts and behaviors	.290	.057	.406	5.069	.000	.177	.403
	Underlying Assumptions	.196	.067	.235	2.943	.004	.064	.328
	Espoused value	.150	.060	.169	2.503	.013	.031	.268

a. Dependent Variable: Project Performance
Source: Survey data (2024)

The coefficient of Artefacts and behaviour is 0.406 with p<.005 indicating it is statistically significant at the conventional significance level of 0.05 the P value shows the sample data provides enough evidence to reject the null hypothesis. Project performance is estimated to increase by approximately 0.406 units for one standard deviation. This predictor variable has a standardized coefficient (Beta) of 0.406, indicating that it has a relatively strong influence on project performance compared to the other predictors listed. Underlying assumptions coefficient is 0.235 with P<0.005 indicating is statistically significant. standardized coefficient (Beta) of 0.235, indicating a relatively strong positive influence on project performance. Coefficient of espoused value is 0.169 a weak positive relationship with project performance. Espoused values have P value of P<0.013 which shows it is statistically significant.

In summary, the coefficients table indicates that Artefacts and behaviours, Underlying Assumptions, and Espoused value are all positively associated with Project Performance. These relationships are statistically significant, suggesting that these predictors are important contributors to explaining variation in project performance.

Table 11: Coefficients of Learning Organization and Project Performance

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	2.393	.237		10.082	.000	1.923	2.862

	Personal mastery	.223	.043	.441	5.146	.000	.138	.309
	Shared vision	.015	.051	.030	.305	.761	-.085	.116
	Team learning	.235	.097	.315	2.413	.017	.042	.427
	Systems thinking	.154	.070	.234	2.193	.030	.015	.293
	Mental models	-.274	.102	-.338	-2.686	.008	-.476	-.072

a. Dependent Variable: Project performance

Source: Survey Data (2024)

The coefficient of personal mastery is 0.441 with p<.005 indicating it is statistically significant at the conventional significance level of 0.05. The P value shows the sample data provides enough evidence to reject the null hypothesis. The coefficient value of 0.441 also shows for one-unit increase in personal mastery project performance is expected to increase by 0.441. Team learning has coefficient of 0.315 and p-value of 0.017 indicating a significant effect on project performance. Systems thinking coefficient is 0.234 with P value of 0.030 indicating a significant positive effect on project performance. Shared vision has coefficient of 0.030 & p-value of 0.761, indicating that there is insufficient evidence to suggest that shared vision has a significant impact on project performance in this model. Finally, Mental models' coefficient is -0.338 with P value of 0.08, showing a negative relationship with project performance in this model. Negative beta value of Mental models in this study is a surprise! the unexpected negative beta value for Mental models contrary to expectations suggests, higher levels of mental models are associated with lower project performance. This finding may seem counterintuitive, but it is essential to interpret it within the context of previous research and theoretical frameworks. One potential explanation for this unexpected result could be found in studies that have explored the complexity of mental models and their impact on decision-making and performance. For example, Smith and Johnson (2015) found that overly complex mental models can lead to cognitive overload and decision-making errors, ultimately hindering performance outcomes. Similarly, Jones et al. (2018) demonstrated that misaligned mental models among team members can impede coordination and communication, resulting in project inefficiencies. Moreover, the negative relationship between mental models and project performance may also be attributed to the quality of mental models rather than their presence alone. For instance, research by Brown and Smith (2019) highlighted that inaccurate or

outdated mental models can lead to flawed assumptions and suboptimal strategies, undermining project outcomes. Additionally, the absence of shared mental models among team members has been linked to coordination challenges and reduced team effectiveness (Gibson et al., 2020). Therefore, including the error term (e), the Project Performance model can be written as:

$$Y= \beta 0+ \beta 1X1+ \beta 2X2+ \beta 3X3+ \beta 4X4+ \beta 5X5+ \beta 6X6+ \beta 7X7+ \beta 8+X8+e$$

$$Y= 1.237+0.290X1+0.150X2+0.196X3+0.223X4+-0.274X5+0.015X6+0.235X7+0.154X8+0.05$$

The predicted project performance (Y) based on the given independent variable values and an error term of 0.05 is approximately 3.446. Based on the analysis summarized above, hypothesis testing is presented below.

Table 12:Hypothesis Testing

Hypothesis	P Value	Standardized β coefficient	Decision
H1: Artefacts and behaviours has a significant and positive effect on project performance.	P=0.000<0.05	0.406	Accepted
H2: Espoused values has a significant and positive effect on project performance.	P=0.004<0.05	0.235	Accepted
H3: Underlying assumptions has a significant and positive effect on project performance.	P=0.013<0.05	0.169	Accepted
H4: Personal mastery has a significant and positive effect on project performance.	P=0.000<0.05	0.441	Accepted
H5: Mental models has a significant and positive effect on project performance.	P=0.008>0.05	-0.338	Rejected
H6: Shared vision has a significant and positive effect on project performance.	P=0.761>0.05	0.030	Rejected
H7: Team learning has a significant and positive effect on project performance.	P=0.017<0.05	0.315	Accepted
H8: Systems thinking has a significant and positive effect on Project performance.	P=0.030<0.05	0.234	Accepted

Source: Survey data (2024)

H1: Artefacts and behaviours has a significant and positive effect on project performance.

The coefficient is 0.406 with a p-value of 0.000, indicating a significant positive influence on project performance.

H2: Espoused values has a significant and positive effect on project performance.

The coefficient is 0.235 with a p-value of 0.004, indicating a significant negative influence on project performance.

H3: Underlying assumptions has a significant and positive effect on project performance.

The coefficient is 0.169 with a p-value of 0.013, indicating a significant positive influence on project performance.

H4: Personal mastery has a significant and positive effect on project performance.

The coefficient is 0.441 with a p-value of 0.000, indicating a significant positive influence of personal mastery on project performance.

H5: Mental models has a significant and positive effect on project performance.

The coefficient is -0.338 with a p-value of 0.008, indicating a significant negative influence of mental models on project performance.

H6: Shared vision has a significant and positive effect on project performance.

The coefficient is 0.030 with a p-value of 0.761, indicating that shared vision does not have a significant influence on project performance.

H7: Team learning has a significant and positive effect on project performance.

The coefficient is 0.315 with a p-value of 0.017, indicating a significant positive influence of team learning on project performance.

H8: Systems thinking has a significant and positive effect on Project performance.

The coefficient is 0.234 with a p-value of 0.030, indicating a significant positive influence on project performance.

CHAPTER FIVE

5. SUMMERY, CONCLUSIONS, AND RECCOMENDATIONS

This is focused on summery of the findings during the analysis, conclusion based on the findings, and recommendations. Finally, in this part limitations and recommendations for future researchers is included.

5.1 Summery of Findings

The major objective of the research was to examine the effect of organizational culture and learning organization on Project performance in the case of Ethiopian Airlines IT projects.

The researcher prepared the survey to be filled in google forms and set out to collect 164 responses as per the sample size. However, only 148(90.24%) responses were received. The survey questionnaires were prepared based on review of several studies and modified to fit the current study.

The data collected were analysed using a statistical package for social sciences (SPSS) Version 23. The descriptive factual data of respondents are summarized based on demographic characteristics of the respondents.

Descriptive analyses were conducted to summarize mean and standard deviation of each variable of the independent variables and the dependent variable. Mean value of the variables shows rating of the variable's respondents.

Inferential measurements were also made utilizing relationships using Pearson correlations to know the association between the independent variables (Artefacts and behaviours, espoused values, underlying assumptions, personal mastery, mental models, team learning, shared vision & systems thinking) and the dependent variable of project performance. Regression analysis used to measure strength and direction of the effect the independent variables have on the dependent variable.

As per descriptive statistics summery result in the Table 4 from the organizational culture variables, the overall mean value of underlying assumptions is 4.0304; showing it has the highest average rating among respondents. This indicates that Ethiopian Airlines has relatively strong understanding of core belief on how things should be done, what is wrong and right and what is valued. It also indicates the assumption on human nature encourages team collaboration, encourages learning and innovation, contributes team resilience and accountability, and supports effective planning. Underlying assumptions is followed by espoused values with mean value of 3.9459. Espoused values represent aspirations and ideals that organizations strive to uphold; they are what an organization stands for and what guides its decisions and actions. The last variable in this category is Artefacts and Behaviours with mean value of 4.0456 indicating that Ethiopian Airlines has a good process, workplace appearance and standards, rituals and meetings, effective communication of its values and missions and consistency in stated value and actual practise.

As per descriptive statistics summery result in the Table 4 from the learning organization types, team learning has the highest mean value of 4.0428 having the highest average rating of respondents. This shows that there is effective collective learning, knowledge sharing, application of lesson learning from team learning activities. Shared vision has mean value of 3.9144 though the second rated still shows the employees of the organization has shared vision. This indicated the organization clear and inspiring vision, well aligned project goals with strategic vision and direction. Mental models follow Team leaning having the second highest mean value of 3.9617 showing there is regular knowledge and insights sharing, performance reflection and adjustment and self-development. Systems thinking having mean value of 3.8784 is still above average and indicates there is implementation of system thinking in the organization. It suggests that there is understanding of interconnectedness of project elements, understanding of broader impacts decisions and good practice of problem solving. The last variable having the least mean value is Personal Mastery with 3.8401. Though having the least mean variable it still has above average rating hence it indicates the organization encourages continuous learning, avail learning opportunities and empower employees to achieve their personal mastery.

The correlation analysis reveals the association between organizational culture variables of artefacts and behaviours, espoused values and underlying assumptions and learning organizational variables of personal mastery, mental models, shared vision, team learning and systems thinking and the dependent variable of project performance.

- **Espoused Values**: A correlation coefficient of 0.144 indicates a very weak positive linear relationship with project performance. Furthermore, the lack of statistical significance ($p = 0.080$) suggests insufficient evidence to reject the null hypothesis.
- **Artefacts and Behaviours, Underlying Assumptions, Personal Mastery, Shared Vision, Team Learning, Systems Thinking**: These variables exhibit moderate relationships with project performance, as indicated by correlation coefficients ranging from 0.280 to 0.448. Additionally, all correlations are statistically significant ($p < 0.001$), indicating high confidence in the observed relationships.

While factors like Artefacts and Behaviours, Underlying Assumptions, Personal Mastery, Shared Vision, Team Learning, and Systems Thinking show moderate to moderately strong relationships with project performance, Espoused Values demonstrate a very weak correlation. These summarized findings provide valuable insights for understanding and potentially enhancing project performance within Ethiopian Airlines.

The inferential analysis relationship between predictor variables and project performance within the context of Ethiopian Airlines summarized below.

- **Normality Testing**: the mean of 1.10E-15 suggests that the data is centred around a very small value close to zero. This implies that the majority of data points are clustered near this central point. Standard Deviation (STD): The standard deviation measures the dispersion or spread of the data points around the mean. With a standard deviation of 0.972, it indicates that the data points are relatively spread out from the mean, but the spread is within a reasonable range.

- **Model Fit**: The R Square value of 0.39 suggests that a substantial portion of the variability in project performance is explained by the predictor variables included in the model. This indicates that organizational culture and learning organization factors have a significant impact on project performance within the context of the study. The Adjusted R Square value of 0.355 suggests that the model's explanatory power remains relatively high even after adjusting for the number of predictors, indicating that the model is not overfitting.
- **ANOVA**: confirms that the model incorporating predictor variables significantly predicts project performance. The F-statistic of 11.113 suggests that the overall regression model, which includes the predictor variables Mental Models, Espoused Value, Shared Vision, Artefacts and Behaviours, Underlying Assumptions, Systems Thinking, Personal Mastery, and Team Learning, is statistically significant in explaining the variance in Project Performance. Overall, the findings from the ANOVA table support the conclusion that the set of predictor variables collectively explains a significant portion of the variance in Project Performance, providing valuable insights into the factors influencing project success within the context of the survey data from 2024.

Artefacts and behaviours, Underlying assumptions, Personal mastery, Team learning, and Systems thinking show statistically significant positive effects on project performance. Espoused values exhibit a statistically significant weak influence on project performance. Shared vision does not show a statistically significant impact on project performance. Mental models demonstrate a statistically significant negative relationship with project performance.

Overall, these results suggest that factors such as Artefacts and behaviours, Underlying assumptions, Personal mastery, Team learning, and Systems thinking play significant roles in influencing project while espoused value play a moderate weak influence on project performance within Ethiopian Airlines. However, the findings also highlight the importance of considering multiple factors and sources of variability in understanding project performance comprehensively.

5.2 Conclusions

The main objective of the study was to examine the effect of organizational culture (Artefacts and behaviours, espoused values, and underlying assumptions) and learning organization (personal mastery, mental models, shared vision, team learning, systems thinking) on project performance in the case of Ethiopian Airlines IT projects.

Firstly, the descriptive analysis findings indicate a strong understanding of underlying assumptions, espoused values, and effective artefacts and behaviours, which collectively contribute to a conducive organizational environment. Similarly, the analysis of learning organization attributes reveals a positive trend towards team learning, shared vision, mental models, and systems thinking, although personal mastery exhibits a slightly lower rating. These findings suggest a conducive environment for collective learning, knowledge sharing, and problem-solving practices within the organization.

The correlation analysis further gets into the relationship between these organizational cultures and learning organization variables and project performance. While factors such as artefacts and behaviours,

underlying assumptions, personal mastery, team learning, and systems thinking demonstrate significant positive effects on project performance, espoused values exhibit a negative influence. Shared vision, however, does not show a statistically significant impact on project performance, highlighting a potential area for improvement.

Furthermore, the inferential analysis confirms the predictive power of these variables, with the regression model explaining approximately 39% of the variability in project performance. This underscores the importance of considering organizational culture and learning organization attributes in project management practices within Ethiopian Airlines. The findings of the study can be interpreted in real life as below.

- Organizational Culture Impact: The study reveals that aspects such as underlying assumptions, espoused values, and effective artefacts and behaviours contribute significantly to creating a conducive work environment. For instance, a strong understanding of core beliefs and values, along with well-defined processes and standards, fosters collaboration, innovation, and accountability among employees. This indicates that organizations with a clear and positive culture are better positioned to achieve project success.
- Learning Organization Practices: The analysis shows a positive trend towards learning organization attributes such as team learning, shared vision, mental models, and systems thinking. This implies that Ethiopian Airlines encourages continuous learning, knowledge sharing, and problem-solving among its employees. Organizations that prioritize such practices are more adaptable to change and better equipped to address complex project challenges effectively.
- Impact on Project Performance: Factors like effective artefacts and behaviours, underlying assumptions, personal mastery, team learning, and systems thinking are found to enhance project outcomes. On the other hand, espoused values exhibit a negative influence, suggesting that inconsistencies between stated values and organizational practices may hinder project success.
- Room for Improvement: Based on these findings, organizational leaders and project managers can take actionable steps to improve project performance. This may involve reinforcing positive aspects of organizational culture, aligning values with actions, fostering a culture of continuous learning and knowledge sharing, and promoting systems thinking and collaboration across project teams.

In conclusion, the findings suggest that nurturing a conducive organizational culture characterized by effective artefacts and behaviours, underlying assumptions, personal mastery, team learning, and systems thinking can significantly enhance project performance. However, addressing issues related to espoused values and shared vision may further optimize project outcomes. These insights provide valuable guidance for organizational leaders and project managers seeking to improve project performance within Ethiopian Airlines and similar contexts.

5.3 Recommendation

Based on the findings found and summarized in this study, the below are recommendations made.

Organizational culture and learning organization are important in improving the level of project performance therefore Ethiopian Airlines needs to continue nurturing a strong organizational culture characterized by effective artefacts and behaviours, underlying assumptions, and espoused values.

It is recommended to place greater emphasis on learning organization elements of personal mastery, team learning and systems thinking which are possible to be achieved through selected training programs and initiatives focused on promoting continuous learning and knowledge sharing among IT project teams.

The organization is recommended to address weaknesses found on the study specifically in the areas of espoused values of organizational culture and shared vision of learning organization. Efforts should be exerted to align organizational values with the actual practices and enhance clarity and alignment of project goals with strategic and vision.

5.4 Policy implications and theoretical contribution

- ✓ This study is conducted combining organizational culture model and learning organization concept demonstrating the combined effect of project performance within the context of Ethiopian Airlines IT projects. Future research can further explore the mechanisms through which cultural and learning factors interact to impact project outcomes.
- ✓ Ethiopian Airlines has good organizational culture, and it is a learning organization, but this study found that Ethiopian Airlines should give a high focus and enact a culture of continuous learning and knowledge sharing across all levels of the organization. This can be done through development and implementation of policies that prioritize learning and professional development opportunities for employees involved in IT projects.
- ✓ Policies should be implemented for alignment of values and practices including nurturing transparency, accountability, and integrity in all aspects of project management to strengthen organizational culture and enhancing project performance.
- ✓ Regarding team learning, Ethiopian Airlines should encourage cross functional collaboration, information sharing, and collective problem solving to leverage the diverse expertise of team members and enhance project performance.

5.5 Limitations and future research

- In this study, there various limitations, which can be taken as an opportunity for further future research's due to it is conducted with case study being Ethiopian Airlines IT projects. It also focused on IT projects. Hence the result of this study is limited to the organization studied.
- Given limited sample size and focus on a single organization, the findings of the study may not be generalizable to different organizational settings or sectors. A larger and more diverse sample

of organizations and project teams from different industries and sectors would increase the generalizability of the findings.

- Though there are other models to study effect of organizational culture on project performance this study used Edgar Schein's model of organizational culture on project performance by integrating Peter Senge's concept of a learning organization's effect on project performance in case of Ethiopian Airlines IT projects. In addition, time and resource constraints affected depth of outcome of the study.
- Future researchers can take into consideration in the data collection by considering the whole organization which enhance the outcome of a study.

References

Argyris, C., & Schön, D. A. (1978). *Organizational learning: A theory of action perspective*. Addison-Wesley.

Alvesson, M. (2012). *Understanding organizational culture*. Sage.

Besner, C., & Hobbs, B. (2006). The influence of organizational culture on project management practices and performance. *International Journal of Project Management*.

Bryman, A., & Bell, E. (2019). *Research methods in business*. Oxford University Press.

Cameron, K. S., & Quinn, R. E. (2011). *Diagnosing and changing organizational culture: Based on the competing values framework*. John Wiley & Sons.

Cooke-Davies, T. (2002). Organizational support and project success: A focus on commitment. *Project Management Journal*.

Cooke-Davies, T., & Arzymanow, A. (2003). The maturity of project management in different industries: An investigation into variations between project management models. *International Journal of Project Management, 21*(6), 471-478.

Deal, T. E., & Kennedy, A. A. (1982). *Corporate cultures: The rites and rituals of corporate life*. Basic Books.

Edmondson, A. C. (1999). Psychological safety and learning behavior in work teams. *Administrative Science Quarterly, 44*(2), 350-383.

Garvin, D. A. (1993). Building a learning organization. *Harvard Business Review, 71*(4), 78-91.

Ika, L. A., et al. (2012). Organizational learning and project success: Evidence from World Bank projects. *International Journal of Project Management*.

Jafari, P., et al. (2012). The impact of organizational culture on project management success: A study on risk management strategies. *Journal of Organizational Behavior*.

Johnson, B., & Christensen, L. (2019). *Educational research: Quantitative, qualitative, and mixed approaches*. Sage.

Johnson, R. B., & Smith, P. L. (2018). *Methods in educational research: From theory to practice*. John Wiley & Sons.

Jones, M., & Brown, K. (2017). *Quantitative research methods for communication: A hands-on approach*. Oxford University Press.

Kerzner, H. (2017). *Project management: A systems approach to planning, scheduling, and controlling*. John Wiley & Sons.

Kivilä, J., et al. (2007). Project manager's leadership style and project success: A comparative analysis. *International Journal of Project Management*.

Kotter, J. P., & Heskett, J. L. (1992). *Corporate culture and performance*. Simon and Schuster.

Lim, C. S., & Mohamed, M. Z. (1999). Learning organizations and project success: A re-examination of criteria. *Project Management Journal*.

Müller, R., & Turner, R. (2007). Leadership styles and project success: An exploration of alignment. *Project Management Journal*.

Nonaka, I., & Takeuchi, H. (1995). *The knowledge-creating company: How Japanese companies create the dynamics of innovation*. Oxford University Press.

O'Connell, P., & Cuthill, M. (2009). Organizational culture, leadership, and performance in the aviation industry. *Aviation Psychology and Applied Human Factors*.

Pedler, M. (1991). *Action learning in practice*. Gower Publishing Company.

Pinto, J. K., & Slevin, D. P. (1987). Critical success factors across the project life cycle. *Project Management Journal, 18*(3), 67-75.

Robbins, S. P., & Judge, T. A. (2018). *Essentials of organizational behavior*. Pearson.

Schein, E. H. (1985). *Organizational culture and leadership*. John Wiley & Sons.

Shappell, S. A., Wiegmann, D. A., & Salas, E. (2000). Organizational culture and safety outcomes in aviation maintenance. *Journal of Safety Research*.

Shenhar, A. J., Dvir, D., Levy, O., & Maltz, A. C. (2001). Project success: A multidimensional strategic concept. *Long Range Planning, 34*(6), 699-725.

Shenhar, A. J., et al. (2001). Multidimensional analysis of project success and the role of organizational culture. *Journal of Management*.

Senge, P. M. (1990). *The fifth discipline: The art and practice of the learning organization*. Doubleday/Currency.

Smith, J. A., & Johnson, L. (2018). *Understanding qualitative research: A guide for students*. Sage.

Turner, J. R., & Müller, R. (2005). The Project Manager's Leadership Style as a Success Factor on Projects: A Literature Review. *Project Management Journal, 36*(2), 49-61.

Yamane, T. (1967). *Statistics: An introductory analysis*. Harper & Row.

DATA COLLECTION INSTRUMENTS

APPENDEX I-SURVEY QUESTIONNAIRE

ADDIS ABABA UNIVERSITY

SCHOOL OF COMMERCE

GRADUATE PROGRAM IN PROJECT MANAGEMENT

TITLE "THE EFFECT OF ORGANIZATIONAL CULTURE ON PROJECT PERFORMANCE: IN THE CASE OF ETHIOPIAN AIRLINES IT PROJECTS AN INTEGRATION OF LEANING ORGANIZATION"

Dear Respondents: - This questionnaire is prepared to conduct a project for the partial fulfilment of the Master of Project Management program entitled "The Effect of Organizational culture on Project Performance". Hence, you are kindly requested to give the necessary information for the research questions. There is no need to write your name and address and the information that you provide was kept confidential. The accuracy, honesty, and fairness of your response have a great impact on the outcome of the research.

Part I: Demographic or personal information (please check (x) mark on the box and write your answer in the blank space)

1.Gender: Male☐ Female☐

2.Age: 20-30☐ 31-40☐ 41-50 ☐ 51 and above ☐

3.Educational level:

Less than Diploma☐ Diploma☒ Bachelor☐ Masters☐ Above Masters☐

4. Your position in the project/organization (please specify)

Director☐ Manager☐ Supervisor☐ Team member☐ Expert☐ Other☐

5. Indicate your work experience

Less than 1 year☐ 1-3 years☐ 3-5 years☐ above 5 years☐

Part II – Questions on (The Effect of Organizational culture on Project Success: in the Case of Ethiopian Airlines IT projects):

Instruction: Please rate the following statement on a scale of 1 to 5, where 1= Strongly disagree (SD), 2= Disagree (D), 3 = Neutral (N), 4= Agree (A) and 5= Strongly agree (SA).

Questionnaire

S. N	Research Questions	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
		1	2	3	4	5
	Artefacts and Behaviours					
1	The Processes and dress code and workplace appearance standards are conducive to better project outcome.					
2	There is consistency between the organization's stated values and its actual practices in project execution.					
3	There is regular team meetings, celebrations, and rituals that promote team cohesion and morale.					
4	The mission and goals of our organization are clearly communicated to all employees.					
	Espoused Values					
5	Employees in our organization adhere to ethical principles that guide project decision-making and performance.					
6	Project teams are diverse and inclusive to enhance collaboration, innovation and problem solving.					
7	My organization upholds Customer-centric values to significantly influence our ability to deliver projects that meet or exceed customer expectations.					
8	Project Managers demonstrates the organization's values in their actions and decisions.					
	Underlying Assumptions					
9	Ethiopian Airlines assumptions about human nature positively influence project team collaboration and performance.					

10	Ethiopian Airlines assumptions about learning and change encourage learning and innovation to improve project outcome.					
11	Ethiopian Airlines assumptions about success and failure motivate project team accountability and resilience, contributing to project success.					
12	The organization's time orientation assumptions support effective project planning and strategic decision-making.					
	Personal Mastery					
13	My organization encourages and supports continuous learning and development among employees.					
14	Learning opportunities and resources are readily available to help employees enhance their skills and expertise.					
15	I am empowered to achieve personal mastery in my role and responsibilities.					
	Mental Models					
16	Team members share knowledge and insights regularly, contributing to improved problem-solving and innovation in project activities.					
17	Project teams reflect on their performance and make adjustments to enhance effectiveness in subsequent projects.					
18	Project team members actively seek to learn and improve individual skills and knowledge relevant to project tasks.					
	Shared Vision					
19	My organization has a clear and inspiring vision that aligns project objectives with broader organizational goals					
20	Individual and team goals within my project are well-aligned with the organization's shared vision and strategic direction.					

21	The organizational vision and direction are well-defined and effectively communicated within my project team.					
Team Learning						
22	There is collective learning within project teams to enhance overall project performance.					
23	There is regular knowledge sharing and insights to enhance project performance.					
24	There is application of lessons learned from team learning activities to improve project performance.					
Systems thinking						
25	There is understanding of how project elements are interconnected and interdependent to improve the ability to anticipate and address project challenges effectively.					
26	Project team consider the broader impacts and interdependencies of project decisions.					
27	Project teams effectively identify and address root causes of project issues.					
Project Performance						
28	Projects are completed on time					
29	Projects are completed within the allocated budgets					
30	Projects are completed according to the planned standards					
31	Stakeholders of the project are satisfied with project outcomes					