ST. MARY'S UNIVERSITY

SCHOOL OF POSTGRADUATE STUDIES

AN ASSESSMENT OF AGILE PROJECT MANAGEMENT PRACTICES FOR FINTECH PROJECT: CASE STUDY ON DASHEN BANK'S FINTECH PROJECT(AMOLE)

By

ETSEHIWOT SOLOMON MAMO

MAY 2024

ADDIS ABABA, ETHIOPIA

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BY: ETSEHIWOT SOLOMON

ADVISOR

DEJENE MAMO

(PHD)

A THESIS SUBMITTED TO ST. MARY'S UNIVERSITY, SCHOOL OF GRADUATE STUDIES IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF PROJECT MANAGEMENT

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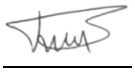
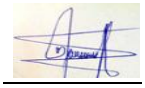
APPROVED BY BOARD OF EXAMINERS

Dean, Graduate Studies	**Signature**	**Date**
Dejene Mamo(PhD)		8/07/2024
Research Advisor	**Signature**	**Date**
Tassew Shedega(PhD)		8/07/2024
External Examiner	**Signature**	**Date**
Muluadam Alemu(PhD)		8/07/2024
Internal Examiner	**Signature**	**Date**

DECLARASION

I, Etsehiwot Solomon, hereby declare that this research project titled "An Assessment of Agile Project Management Practices for Fintech Project: Case Study on Dashen Bank's Fintech Project (Amole)" is my original work. I have not copied from any other student's work or from other sources except where due reference and acknowledgement is made explicitly in the text. I have carried out the present study independently with the guidance and support of the research advisor, DEJENE MAMO (PhD). And the study has not been submitted for award of any Degree or Diploma Program in this or any other Institution. It is in partial fulfillment to the requirement of the program Master's Degree of project management.

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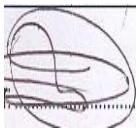
Name Signature

St. Mary's University, Addis Ababa May 2024

ENDORSMENT

This thesis has been submitted to St. Mary's University, School of Graduate Studies for examination with my approval as a university advisor.



Dejene Mamo(PhD) Signature:_____ Date: 6/8/2024

TABLE OF CONTENT

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LIST OF FIGURES

LIST OF TABLES

LIST OF APPENDIX

List of Acronyms and Abbreviations

APM - Agile Project Management

Amole - Dashen Bank's FInTech project

FInTech - Financial Technology

IT- Information Technology

PM - Project Management

PMBOK- Project Management Body of Knowledge

TPM - Traditional Project Management

Abstract

Agile approach is an emerging methodology which has been introduced recently as a new approach for managing complex software projects to improve project performance and efficiency of software development process compare to traditional methodologies used before. This thesis presents a comprehensive assessment of agile project management practices for a FinTech project at Dashen Bank, one of the leading commercial banks in Ethiopia. The study aims to evaluate the adoption and effectiveness of agile methodologies in the development of Dashen Bank's mobile payment platform, Amole. The research utilizes a qualitative case study approach, gathering both primary and secondary data. Primary data was collected through surveys and semi-structured interviews with key project team members, including project managers, developers, business analysts, and other stakeholders involved in the Amole FinTech initiative. Secondary data was obtained from project documentation, Dashen Bank's internal reports, and relevant industry publications. The study examines several key dimensions of agile project management, including agile planning, agile practices, the agile triangle, and the agile manifesto. The findings suggest that the agile approach was largely embraced by the project team, who perceived significant benefits such as increased flexibility, faster time-to-market, better alignment with evolving customer requirements, and enhanced teamwork and communication. However, the research also identified several challenges in the adoption of agile methods, including the need for greater agile training and competency development, more effective cross-functional collaboration between teams, and smoother integration of agile practices with traditional project management processes and governance structures. The study provides valuable practical insights into the opportunities and hurdles faced when deploying agile methods in a complex, large-scale FinTech project context. The results can inform best practices for agile adoption in similar digital transformation initiatives in the banking and financial services sector in Ethiopia and beyond. The research contributes to the growing body of literature on agile project management in the context of enterprise-wide digital transformation

Key Words

Agile, Agile-manifesto, Agile methodologies, Software Development, Project Management, project life cycle

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

Due to ongoing criticism of traditional project management strategies, software development has seen a massive proliferation of innovative project management methodologies over the last fifteen years (Conforto et al.,2014). In general, the Conventional initiatives start off with clear definitions and documentation. Additionally, traditional management consists of multiple independent stages, each of which must be finished without receiving input in order for the next to begin. The product is only released once it is judged to be finished (Fernandez & Fernandez 2008).

Typical project management makes use of thorough planning, precise protocols, accurate procedures, rigorous processes, vast documentation, and considerable upfront design (Henriksen, 2016). The conventional approaches remain popular due to their comparatively simple, systematic, and organized nature as well as their stability, predictability, and increased success rate (Veiga, 2017). Even though a lot of tools and approaches for project management have been developed, none of them have been able to significantly improve project performance and are free from serious issues like cost overruns, missed deadlines, and defective products (Bronte, 2015). They have also not been able to significantly improve the management of complex projects. Unlike other industrial projects, software projects present a challenge for traditional project management because of the rapid changes in technology and business contexts (Chintala, 2015). This is especially true when creating a comprehensive set of requirements upfront. Agility is required due to the nature of IT projects (Williams and Cockburn, 2003).

On the other hand, agile projects emphasize the use of feedback loops to identify project requirements through iteration, which lowers risk and increases flexibility (Fernandez & Fernandez, 2008). The inflexibility of conventional methods began to provide challenges for businesses because of the ever-changing landscape in which they operate (Azanha et al., 2017).These dynamic conditions are brought about by the globalization of competition, which increases the complexity of commercial procedures. Moreover, managers have seized new or developing chances after realizing that the conventional methods have not been able to bring about the necessary adjustments (Ciric & Gracanin, 2017). In ever-changing dynamic circumstances, businesses must enhance their agility and flexibility. In response, several

businesses have implemented and updated Agile Project Management (APM), which entails applying processes differently depending on the scale of projects and the features of products (Azanha et al., 2017).

Since the 1990s, several agile approaches have been created to address the shortcomings of traditional project management by accepting rapid changes rather than rejecting them(Bronte, 2015). Through light and quick project management life cycle, these innovative techniques prioritize frequent delivery, customer participation, and gradual and iterative improvement (Wysocki, 2014). Agile methods are a class of project management approaches that focus more on people than processes and are more flexible than predictable. It continues to take the lead as the most popular development technique in the software sector. Many businesses have adopted agility in one form or another as a result of the pressure to provide products quickly while also managing requirements that are changing quickly (Beck and Andres, 2004). While many of these businesses have been somewhat successful in doing so, many others have encountered difficulties when attempting to switch from the old traditional project management techniques to the more recent agile methodology (Sampaio, 2004).The agile manifesto, suggests a new dynamic method of managing complicated projects in a changing environment. The ideal agile method includes changes to technology, project management methods, workplace cultures, and people's mindsets (Beck and Andres, 2004). Financial organizations now understand how critical it is to implement technology initiatives into their daily operations (Jim and Martin, 2001).

However, the expected advantages of the agile project management strategy are not random; rather, they are the result of thorough planning and the suitability of the chosen approach given the organizational reality and the capacity to handle shifting priorities (Sampaio, 2004). The highly unpredictable nature of software development projects necessitates flexibility and reactivity in all facets of project management (Beck et al., 2001). Delivering advanced goods and supporting creative experiences are made possible by agile approaches, which also keep the product in line with user needs and market trends. To ensure the development of a positive climate in agile project management, the project management style must, above all, be compatible with the increasing needs of project management and appealing to the project managers and team (Sampaio, 2004). This implies that just upgrading the project management methodology relative to earlier, conventional project management techniques will no longer be seen as a convincing project management strategy to be used.

As the project management landscape continues to evolve, there is a growing concern within the realm of complicated project management regarding the evaluation of agile project management practices. This research is specifically focused on addressing this concern and delving into the assessment of agile project management in the current project environment. It is more crucial to evaluate agile techniques from an organizational and project level from a more thorough, impartial, and professional standpoint in order to discover and investigate potential agile outcomes, gaps and their causes, and best practices in due course. The focus of the study was a specific case study of a project-based financial technology company called AMOLE that used an agile project management approach to carry out projects in Addis Ababa.

Identifying scattered financial services within the industry that may cause interruptions, inefficiencies, consumer unhappiness, and related costs is, in this sense, the core purpose of fintech. In order to be creative and competitive, the next step is to figure out how to adapt fintech project management practices to the demands of evolving environmental regulations and the nature of the projects themselves. Projects with well-defined objectives that are initially unknown about their solutions can be handled through agile project management. These projects fall into the category of challenging ones (Robert, 2014).

1.2 Background of the Case Study

In the industry, financial technology companies provide innovative solutions. Since 2010, these businesses have become known as a significant trend in Ethiopia. Specifically: Hello Cash, M-Birr, Amole, Hibir, Mob-Birr, Kifiya, and the most recent CBE-Birr are a few of the well-known companies that have introduced new, advanced technologies to enhance the current standard banking services. Fintechs are now able to offer products that are faster, easier to use, mobile, and less expensive because to the introduction of these new technology. Numerous factors are pushing for the traditional financial services' role to change, as well as project initiatives inside the industry. The next, bolder, and more creative attempt to upend the financial services sector has already started. Fintech, or financial technology, is currently the leading creative disruptor driving the evolution of the financial industry.

With the introduction of the Amole Digital Wallet in Ethiopia in July 2018, Dashen Bank—supported by CR2's Digital Banking Platform—and Ethiopia-based Fintech Moneta Technologies transformed the country's digital customer base by an astounding 4,000%, accelerated customer acquisition, improved liquidity, and became deeply ingrained in the

daily spending habits of millions of Ethiopians.

The Amole tribe of Ethiopia introduced salt money bars in the 16th century, which is where the word "amole" originated. Thus, the Amole Digital Wallet is interwoven with the lengthy history of one of the earliest civilizations on Earth.

Amole's launch has been a huge success. The number of consumers who had registered on the platform by December 2020 was over 2 million, which is a substantial increase from the first 50,000 digital customers of Dashen . With Amole accounting for more than 50% of DStv payments nationwide and already surpassing the amount of card transactions in retail settings, the digital payment platform is undoubtedly making a big contribution to Ethiopia's transition to a cashless society. The wallet was a digital revolution waiting to happen in a market that is obviously becoming a major one, as seen by the extremely quick adoption of the product.

Under the direction of fintech pioneers Moneta Technologies, they implemented a plan to create a thriving ecosystem that integrates digital banking into Ethiopians' everyday life. They assert that one of the main factors in their success has been their cooperation and teamwork. Moneta created the Amole wallet and chose CR2 to give every customer omnichannel access through USSD, mobile apps, and online channels. The selection of CR2 was made in light of its track record of success in the African banking industry, its prompt and efficient project delivery, and its industry-leading digital banking platform, which offers a variety of banking channels. A social networking app, a merchant and agency app, and mPOS (mobile point-of-sale) capabilities are some of the other channels that are offered. To help banks expand their clientele, reduce customer service expenses, and improve customer satisfaction, CR2 offers digital, self-service, and payment solutions. The company, which offers both onsite and remote implementation options, has earned a well-earned reputation for its quick launch times.

1.3 Statement of the problem

The agile method is an essential part of complex project management since it handles all of the old methods and practices that are typically used for traditional projects and offers them a fresh, practical direction (Heriksen and Pedersen, 2017). In order to please their clients, banks need to stay up to date with the growth of software development. Nevertheless, the banking industry is known for utilizing big, slow-to-respond systems (Paiologou and Christou, 2019).

In order to satisfy their consumers, banks need to stay up to date with the advancement of software development; nevertheless, in this regard, the banking industry is renowned for deploying huge, slowly responding systems (Christou & Palaiologou, 2010). Given the critical role financial institutions play in national economies, prioritizing adaptation and evolution becomes imperative, surpassing the significance of merely meeting consumer needs. Today's market is very competitive and technological communication and solutions are developing quickly. The European financial markets have demonstrated this transition, which means that the conservative banking sector must adapt to keep up with societal changes (Vasiljeva & Lukanova, 2016). Short-term fixes or life cycles have an impact on the need for technology solutions, which requires banks to constantly introduce new and relevant goods (levy 2014). Banks can adapt to rapid shifts and brief life cycles by delivering minor enhancements and solutions as concentrating on huge projects takes a lot of effort. Nevertheless, the conventional practices of financial establishments like banks are just too hierarchical to adopt other approaches (Boehm and Turne 2003). The financial institutions must adopt a more horizontal orientation in order to become more nimble and collaborative (Radović-Marković, 2019) .

This study aims to investigate the issue of the Ethiopian FinTech industry's limited acceptance and successful use of comprehensive agile project management principles, specifically with regard to Dashen Bank's FinTech project (Amole). Although agile project management is now widely used in software development projects, (Wysocki, 2014). Its use in FinTech sector is still restricted and uneven.In FinTech industries there is obstacles and prospects linked to the implementation of a more all-encompassing agile methodology, and there is also the lack of adequate understanding and application of agile project management practices (Vasiljeva & Lukanova, 2016).

Agile's ultimate goal is to enable prompt replies to shifting project needs and to project objectives while avoiding risks by guaranteeing better project performance with a defined goal. The anticipated project outcomes are rarely achieved without an appropriate agile methodology that is executed in combination with the organization's current project management trend (Sternkopf, 2018). A project may not be able to achieve a desirable project outcome and timely project delivery if it is not supported by an adaptable and creative project team that ensures an agile approach to meet the success criteria (Singla, 2016). According to the golden triangle of quality, cost, and timing, a project becomes successful when it is finished in line with performance requirements (Westerveld, 2003). Evaluating agile project

management technique in this context is essential in order to determine whether the methods employed to introduce current project management methodology through the use of the agile triangle have produced the expected project outcomes.

Therefore, in order to determine the potential benefits and drawbacks of using agile as a project management technique for encouraging innovation and accomplishing project goals, it is found reasonable to take into account companies that have implemented agile projects and have comparatively more professional project management processes and relevant track records during the implementation. In order to evaluate the agile technique for better project outcomes, this specific study focuses on the project team. The study's objective is to determine which agile project management methods are currently used in challenging project management situations, as these methods are not well understood. For the purposes of this particular study, Amole, a fintech company that has applied the agile software development process in Addis Ababa, was selected as a case study. The study aims to investigate the following central questions in general.

1.4 Research questions

1. To what extent has the agile project implementation methodology gained the support of the project team throughout the organization's structure?
2. To what extent does the adoption of the agile method improved project performance?
3. What are the main obstacles to implementing agile in the Amole setting, as well as recommended practices?
4. To what extent has the project management process been enhanced by the application of the agile approach?

1.5 Objectives of the study

The primary objective of this research is to evaluate how well the agile approach works as a project management methodology when it comes to improving project performance.

Specific objectives of the study

- To assess the effectiveness of the agile project management practices employed in the Amole fintech project at Dashen Bank
- To determine the project team's mindset on the application of agile within the Amole setting.

- to find any shortcomings in the usage of agile as a project management technique and their potential reasons.
- To gain practical lessons from a case under evaluation.

1.6 Scope of the study

Dashen Bank's FinTech project will be specifically examined in this study, with a focus on the AMOLE platform. Addis Ababa, Ethiopia, is the geographic emphasis, offering a specific backdrop for the study. The study focuses on the financial technology (FinTech) industry, specifically highlighting the efforts of Dashen Bank. Within the larger financial services sector, fintech is a vibrant and inventive area.

By concentrating on FinTech, the research may investigate how agile project management techniques fit with the inventive and fast-paced character of this sector, adding to the body of knowledge already available on FinTech project management. The Agile project management methodology used in the creation and execution of the AMOLE project is the main topic of discussion. The study seeks to give a precise and extensive investigation of agile techniques in action, providing useful insights into their adaption and success within the context of a FinTech project. This entails an in-depth analysis by focusing on the AMOLE project.

1.7 Significance of the study

By offering empirical insights on the application of Agile project management, particularly in the FinTech sector, the study adds to the body of knowledge in academia. It provides a nuanced understanding of how Agile practices align with the particular challenges and requirements of FinTech projects, filling in knowledge gaps.

Scholars and researchers acquire a more profound comprehension of efficient project management techniques inside the FinTech industry, facilitating the improvement of theoretical models and advancing the development of optimal approaches.The study's conclusions provide practical implications for financial institutions, especially Dashen Bank, by shedding light on how Agile approaches can be implemented in FinTech initiatives in an efficient manner. Financial institutions can improve efficiency and creativity by using this information to refine their project management techniques. Evidence-based Agile techniques can be implemented by Dashen Bank and comparable organizations, improving project outcomes, accelerating time to market, and enhancing flexibility in response to market shifts.

A realistic grasp of the difficulties in FinTech project management may be gained from the identification and study of the hurdles experienced during the agile implementation in the AMOLE project. By addressing these issues, the FinTech industry can adopt an agile adoption strategy that is more realistic and all-encompassing. By understanding the hazards and difficulties related to Agile approaches, practitioners can create plans to get around roadblocks and improve the overall performance of FinTech initiatives. A comprehensive knowledge of how Agile practices affect the many parties participating in the FinTech project is made possible by taking into account the opinions of the numerous stakeholders in the study. Stakeholder cooperation, communication, and interest alignment may all benefit from this. Increased collaboration among stakeholders can have a positive impact on project outcomes by promoting a more inclusive decision-making process and guaranteeing that the varied requirements and expectations of stakeholders are taken into account.

Project undertakings have gotten increasingly difficult and challenging as the financial sector has gradually looked to increase its competitiveness as a whole and creativity. Project management and follow-up are crucial to the success of these efforts. In this sense, acquiring information based on the goals of an assessment of agile project management practices may provide important insights for enhancing project management operations. The study is current as it directly addresses an important problem in project management, and as such, it may provide valuable insights for both practitioner and scholarly research in the future.

1.8 Limitation of the study

Agile project management is still a relatively new idea for businesses other than the software development sector. The findings might therefore have a narrow scope. Furthermore, this specific research is a case study, as stated in the research methodology. Because of this, it is not immune to the typical complaint directed at other case studies, which is that it relies too heavily on a particular case outline, making it challenging to draw broad insights (Tellis, 1997). Because the study only used Amole cases and used a total of small cases, it offers very little basis for scientific generalization.

Due to the limitations of descriptive statistics, this study is limited to summaries of the case that is being measured. Reliability of the research findings: As previously said, this study's capacity to be broadly generalized to a larger population may be restricted by the research's technique as well as its setting. Furthermore, because of the project's agile methodology and nature, the study primarily gives the viewpoint of the project team and the replies of the case

under review from the major project stakeholders. As a result, conclusions could be interpreted in different ways (Shadish, 2001; Yin, 2009). As a result, when referring to the research, the reader should consider these limitations.

In order to measure the effectiveness of agile, a well-designed, complete study with a clearly defined context-specific investigation is necessary in order to achieve an objective, integrated assessment of the agile project. Examining agile projects simply means taking into account the outcomes of both the traditional and agile project management approaches when managing the projects by documenting both practices and other essential items. However, the focus of this specific study is only on the adoption of the agile method as a crucial component of the project management approach, as stated in the study's objective.

1.9 Definitions of terms

In an effort to reduce some of the uncertainty around concepts that are often open to a wide variety of personal interpretations, it is crucial that some of the main ideas in this study be properly explained.

A Project:--An association of individuals committed to a certain goal or aim is called a project. Large, costly, unusual, or risky tasks that must be finished by a particular time, for a specific sum of finances, and within an established level of success are typically included in projects (Kerzner, 2004).

Agile:-indicates that it is adequate and light (Robert and Wysocki, 2014).

Agile methods:-Agile processes are simple and aim to reduce the risk of failing projects by creating and distributing products in brief iterations.

The aim of implementing agile methodologies is to generate superior quality output within a reduced time frame. Agile approaches were created to speed the design process and remove obstacles to taking into account changes in business requirements throughout the execution phase (Jim , 2009).

Agile software development:- is a methodical approach to project planning and direction (Wesley, 2002).

Fin-tech:- Financial technology is an influential force in the financial sector, altering the established practices of finance organizations (Bazot, 2013).

Fin tech company:- offers banking services through the use of advanced business models, computerized systems, and inventive approaches to the market to deliver internet:-based and application-oriented ideas (Thomas, 2015).

A project management:--is the process of applying information, abilities, instruments, and methods to project tasks in order to meet the project's objective. A project is a short-term organization's gathering of resources that are both human and nonhuman with the goal of achieving a certain objective (Atkinson, 1999).

1.10 Organization of the study

Five chapters make up the structure of this study. To keep things simple, the first chapter discusses and gives a brief overview of the background information on the topic being studied. It also includes the problem statement, objectives, research questions, study scope, study limitations, and other introductory information. The examination of several relevant literature and the presenting of previous studies' conclusions on the research issue are covered in the second chapter. In order to identify the fundamental factors and their connections, the chapter additionally sets out the conceptual framework of the research. The research approach of the study is outlined in the third chapter. The evaluation, layout, as well as interpretation of the data acquired results utilizing suitable charts, graphs, and tables are the main topics of the fourth and final chapters. The final chapter summarizes the findings and makes relevant suggestions.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The study question, which asked whether using an agile approach instead of an outdated project management methodology will enhance project performance in a banking technology setting, is presented in the initial section. The professional literature that is relevant to the study's topic is presented in this section and is positioned within the study's scope. The purpose is to present background information on the study issue in order to determine the fields of interest, build a strong body of previously published literature, and examine the main research question: How significantly has the performance of projects enhanced since the agile method was adopted? It will first be necessary to conduct a thorough analysis of the relevant literature areas in order to adequately study this subject. This gives a quick overview of these subjects' past research as well as the primary fields in which it has been done. There are two main reasons why this is an essential stage in the entire process. It guarantees that the study being done here is not a continuation of previously finished work.

The literature review serves as a framework for the studies in respect to the present state of knowledge in science for a second reason. This sets the context for earlier studies and serves as a guide to the current study, which will be covered in-depth in the review of the literature. This part will conclude with an evaluation of the current agile software development and project management methodologies, along with a thorough demonstration of their limitations in the context of banking technology. After outlining what is lacking in the existing literature, it is going to clearly shown how each research issue is attempted to be addressed by this study.

2.2 Theoretical reviews

The digitization of Swedish banks is resulting in a greater reliance on technology to drive their operations (Wilson & Campbell, 2016). Banks are trying to become more cost- and process-efficient by bringing in new techniques to their current operations. As a result of banks' innovative approaches to customer accessibility through digital channels, their services will function substantially differently from those of traditional banks and resemble those of fintech firms (Vasiljeva & Lukanova, 2016; Wesley-James, Ingram, Källstrand, & Teigland, 2015).Even more problematically, fintech companies operate in a somewhat similar market to

banks but are not subject to the same restrictions. Customers trust banks more and choose them over other options. They have a larger customer base and more integrated systems with the external environment (society), which makes it difficult to bring about modifications quickly because there is a lot of tradition that is unchangeable or requires time for modification (Knudson, 2019; Collyeret al., 2010).But in order to be competitive against their technologically advanced peers, banks must keep up with the times and advance their technological prowess. It is necessary to keep up with technology improvements because traditional banking methods are out of date with today's market (Vasiljeva & Lukanova, 2016; Harvey, 2016; Wilson & Campbell, 2016).

Past study indicates that banks are required to keep up with the continuous changes in their environment. Banks are thinking about how to take advantage of the changes that are happening and adapt. As a result, the banking sector has increasingly adopted agile methodologies (Menor, Roth, & Mason, 2001). When creating new digital solutions, banks have historically used traditional methods the most; nevertheless, agile approaches have proven more successful in these environments (Roses, Windmöller, & Carmo 2016). In order to adapt to the changing needs of the market, organizations have included more agile methodologies into their software development processes (Mohanet al., 2010). The benefits of implementing agile principles in software development teams at a Brazilian bank. The researchers discovered that while certain approaches might coexist, agile methods were better than those utilized at the bank. This implied that the bank may occasionally employ both agile and conventional procedures. To achieve this, a model anticipating several viewpoints utilized to ascertain the coexistence of the two approaches was developed (Roses et al.,2016).

2.2.1Project management

Project management is defined formally as follows by the Project Management Institute (PMI): applying information, abilities, instruments, and methods to project tasks in order to fulfill project specifications. A project is a brief undertaking started with the intention of producing a special good, service, or outcome. Projects have a clear start and finish because of their transient nature (PMBOK Guide, 2008). It is evident from the aforementioned project characteristics that a distinct approach to project management is necessary. The idea of project management developed to help with the planning, coordinating, and control of the numerous intricate and frequently disparate tasks associated with projects (Roberts and Wallace , 2004). A collection of instruments and methods used by individuals to define, arrange, and keep track of project operations are combined into project management (Beck

Kent, 2001). In addition to using tools and procedures to carry out project operations, project managers are in charge of overseeing the project processes. Even initiatives with a disorganized approach are made up of procedures (Beck and Andres, 2004). Organizing teams and projects according to the PMI-recommended project management procedures has several benefits.

According to Roberts and Wallace, project management encompasses the entire project life cycle, from conception to conclusion. Thus, it involves determining the different success and failure criteria for a project and then planning and managing it as a unified unit so that Every success criterion is satisfied (Roberts and Wallace, 2004). People and the systems, procedures, equipment, and techniques they employ are the foundation of project management. Any type of project management requires a system and a team of individuals capable of operating the defined system (Henriksen, 2016). Project management focuses on multiple goals at once. Generally, the goals are classified as follows: time, money, and quality (Roberts and Wallace, 2004).

By incorporating the project team and the clients, the project management strategy aims to advance the project. The project manager is essential to a project since it is their job to organize the project and specify its tasks (Karlsen, 2005). Moreover, using instruments, information, abilities, and strategies to direct project activities toward project requirements is a simple definition of project management (PMI, 2013).

2.2.2 Agile project management

An established and logical approach to an unpredictable project where complexity is the norm and difficult to avoid is agile project management. Agile is "the capacity to create and adapt to change," according to Agile Alliance. It's a strategy for navigating and eventually thriving in an unstable and unpredictable environment.

Adaptive planning, iterative and evolutionary development, quick and adaptable change reaction, and communication promotion are the four main traits that underpin all agile approaches (Peter Maher, 2009). Its primary focus lies in adhering to the "Light but sufficient" ideals and emphasizing communication and people-centeredness. It is more appropriate for the creation of small projects since it is called a lightweight process (AnfanZuo, 2010). According to agile software development, production teams should begin with straightforward and reliable estimates of the ultimate demand and then gradually increase the level of detail as the project progresses. At every step of the production process,

the design, coding, and testing are further improved by this gradual refinement of the requirements. As a result, the requirements work product is equally accurate and practical as the finished software (source).

Sutherland and Schwaber's 1995 Conference talk on agile concepts and their implementations in software development was the catalyst for the methodology's initial rise to prominence (Cervone, 2011). Traditional software development methods are not appropriate for empirical, unpredictable, and non-repeatable processes, according to the analysis of these methods' findings (Cervone, 2011). In order to effectively handle and manage changes and uncertainties, agile project management was created (Azanha, 2017). Early in the new millennium, experts in the field of technology and information released a paper known as the Agile Manifesto, which gave rise to the acronym APM. The core principles of agile project management are outlined in the manifesto (Azanha, 2017). Using a variety of agile techniques, professionals established the agile manifesto in 2001. The concepts and values included in the manifesto support the software development processes (Highsmith 2002). When using agile methodologies, one should adhere to the 12 principles and fundamental values of the Agile Manifesto (Schön& Thomaschewski 2015). The concept of working in an agile manner was not established prior to the creation of the manifesto; yet, the many approaches shared a common theoretical framework. As a result, it was necessary to label the concept and summarize it collectively.

Numerous success stories testify to the advantages of switching to agile project management (Altexsoft, 2016). But adopting agile project management calls much more than just the application of methods, procedures, and tools. There is a difference between "doing agile" and "being agile" because the agile mindset involves more than merely applying tools and processes; rather, it is a paradigm shift in project management approaches. Adopting an agile mentality is necessary to run a project in an agile manner (Griffiths, 2015). Equally significant are organizational culture shifts, agile mindsets in individuals and teams, and customer knowledge of agile project management. The Project Management Institute's agile practice guide states that agile team composition, leadership styles, and mentality all influence how well agile project management is used (Bizuayehu,2018).

In 2001, a team of proficient specialists from a software development company created the word "agile" (Fustik, 2017). They produced the agile manifesto, which included suggested ideals and tenets shared by all agile approaches (Fustik, 2017). Adopting agile approaches requires adhering to the 12 principles and 4 values outlined in the Agile Manifesto.

These values can be translated to the IT industry as:

- Individuals and interactions over processes and tools
- Working software over comprehensive documentation
- Customer collaboration over contract negotiation
- Responding to change over following a plan

The Agile Manifesto prioritizes persons and interactions, working software, customer collaboration, and adaptability over rigid processes, detailed paperwork, contract negotiation, and tight planning. Its twelve principles include prioritizing customer satisfaction through early and continuous software delivery, adapting to changing requirements, delivering working software on a regular basis, daily collaboration between business people and developers, structuring projects around motivated individuals, and valuing in-person communication. Working software measures progress, and agile approaches encourage long-term development, technical excellence, simplicity, self-organizing teams, and constant reflection and change to improve effectiveness. These principles seek to promote flexibility, efficiency, and customer-centricity in software development (Devsamurai, 2023).

2.2.3 Dimensions of Agile project management

Variables including incentives, culture, resources, and training are all part of the organizational setting. Individual rewards recognize members whose completed activities reflect individual responsibility, while collective awards support groups whose tasks were made interdependent (Shore, 2008). A number of agile teams operate in a corporate setting. The success or failure of an executive support system can be attributed to a variety of organizational factors, such as the manager's or sponsor's commitment, the organization's adoption of an oral communication process in place of a hierarchical one, the team's acceptance of the application of agile methodology, the gathering of the entire team, the availability of a facility with the most suitable agile base environment that is appropriate for agile style, and an appropriate rewards system.

Team effectiveness is strongly impacted by interactions between team members as well as with other teams, clients, and suppliers (Cao, 2009). The link between inputs and results can be ascertained through group processes. Work procedures and interpersonal interactions within a team are regarded as group processes. Such as communication within the team, cohesiveness, and conflict in the management process, which illustrates how they plan their

actions? Additionally, team members that employ agile methodologies and their practices may have a direct impact on productivity or, at the very least, mediate the relationship between input elements and production outputs. Agile approaches emphasize people, teamwork, and their relationships; hence, team productivity may be greatly impacted by all those activities.

Process includes instructions on how to adhere to agile-oriented requirements for management, such as agile-base project management. It also includes instructions on adhering to agile-base configuration management process. Additionally, the process includes instructions on adhering to a strong communication method, the most important of which is daily in-person meetings, adhering to a regular working schedule, and adhering to solid client loyalty and involvement.

Experience is characterized as things that one goes through or experiences (Conboy, 2009). In the global software business, experience can be supplemented by previously acquired technical knowledge and skill relative to experience duration (Doran, 2004). According to earlier studies, experience has a significant role in improving one's capacity for knowledge management (Chetankumar, 2009). people may comprehend information in domains in which they have prior experience because they pick up new information by connecting it to what they already know. As a result, project teams with greater expertise are better able to comprehend and oversee the agile technique (Cohen and Levinthal's 2004).

Given that agile project management is a relatively new discipline within project management, it represents a maturing paradigm within the profession. Finding the crucial elements that make the difference between a project using agile principles and failure is key. The above discussion covered a number of the key elements that are relevant to agile project management techniques. These provided the foundational knowledge needed to either implement agile as it is in a particular situation or modify the approach in a novel way while taking the project and organizational context into account, allowing for the extraction of new insights.

2.2.4 Agile project management methodologies

A group of 17 seasoned IT professionals formally introduced the agile software development methodology in 2001. Agile is a conceptual framework of methods and guidelines for creating software more quickly, piecemeal, and efficiently (Patel and Ramachandran, 2009).

While traditional software development methodologies lock requirements in place before moving on to the development of the system, agile SDM methods can adjust project requirements based on changes in the environment or in the requirements (Lee and Xia, 2010). Agile systems development methodologies are a collection of software development methods that are designed to accommodate changes in the environment during the implementation of the project activities.

Agile software development methodologies are characterized by iterative development, continuous integration (CI) and the ability to handle changing business requirements (Boehm and Turner, 2005). Best practices have been included into software development since the agile software development approaches gained popularity. the agile methodology is founded on 12 principles and 4 fundamental values (Beck et al, 2001).

Benefits of agile approaches, include lower rework costs, quicker project completion, and more client satisfaction (Masood and Farooq, 2017). They have also identified a few difficulties that can be overcome by combining elements of traditional project management and agile methods. These challenges include difficulties in managing knowledge, difficulties in scheduling tasks, and difficulties in managing large and multi-site projects.

The following are some advantages that agile software development approaches have over conventional or waterfall development technique,(Oyong & Ekong 2019):

- Simplicity
- Hitting the market on target time
- Customer satisfaction guaranteed
- People-oriented
- Iterative delivery of small and complete pieces of software on time
- Face-to-face communication
- Close cooperation between developers and the clients
- Freedom to developers
- Regular adaptation to changes in requirements

The agile family includes a number of various methods, the most prominent of which are mentioned here (Chow and Cao, 2008).

- Scrum
- Extreme Programming (XP)
- Dynamic Systems Development Model (DSDM)
- Crystal
- Feature Driven Development (FDD)
- Lean Software Development (LSD)

The software development community globally has embraced Scrum and XP as the most common methodologies among them (VersionOne, 2018).

Agile software development methods have several advantages over traditional waterfall techniques, including simplicity, timely market delivery, guaranteed customer satisfaction, a people-oriented focus, iterative delivery of small, complete software pieces, face-to-face communication, close developer-client collaboration, developer freedom, and regular adaptation to changing requirements (Oyong & Ekong, 2019). Scrum, Extreme Programming (XP), Dynamic Systems Development Model (DSDM), Crystal, Feature Driven Development (FDD), and Lean Software Development (LSD) are some of the most well-known agile methodologies. Scrum and XP are the most popular approaches within the global software development community (VersionOne, 2018).

2.2.5 Traditional software development methodologies

Conventional methods are plan-driven, starting with the collection and recording of all requirements, then moving on to the development and assessment of architectural and high-level designs.

The term "heavyweight" was coined for this methodology because of these weighty components (Broy, 2006). This process-eccentric approach to software development, according to some practitioners, is annoying and problematic when change rates are still somewhat low. Because of this, a number of consultants have created their own approaches and procedures to accept and deal with the unavoidable shift they were going through (Larman and Basili 2003).

One of the known traditional methodologies is the water fall approach. The waterfall method places a strong emphasis on a planned transition between distinct stages (Schaffer, 2013). Every phase has a specific set of tasks and deliverables that need to be completed in order for the next one to start. Although the phases are always given different names, the fundamental concept is that the first stage attempts to capture The second phase establishes the system's functionality, software requirements, and design approach (Oyong and Ekong, 2019). The developers begin testing the system in the third stage, and implementation responsibilities like training and extensive documentation are the main focus of the last phase. Nonetheless, in engineering practice, all sequential software engineering methodologies are referred to by the general term "waterfall" (Oyong and Ekong, 2019).

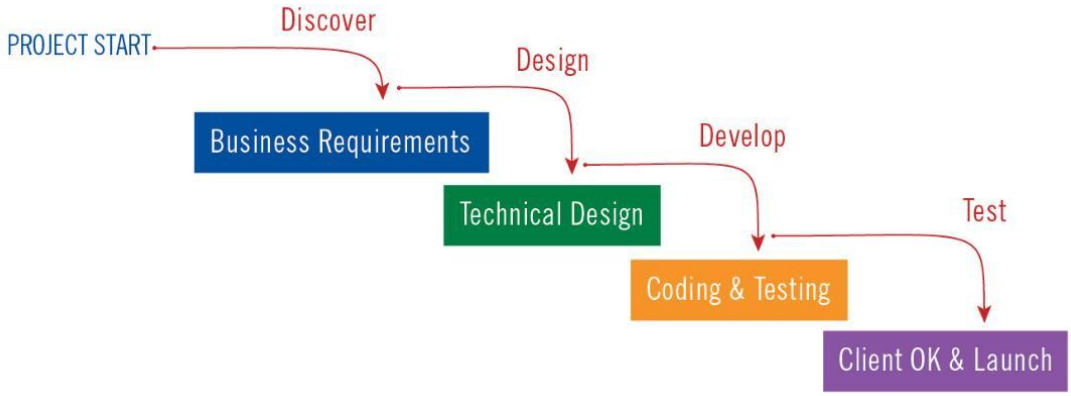

Figure 1 ; Waterfall method

source: (Sutherland, 2014)

The waterfall approach suggested developing software in the stages that are depicted below, with each stage using the output of the previous one as an input. This approach was taken from the engineering discipline, which places a strong emphasis on accurate early planning. As a result, the model is essentially plan-driven, with documentation of all requirements coming before high-level and architectural design, development, and implementation (Oyong and Ekong, 2019). Traditional Software Development Methodologies (TSDMs) are the overall term for the waterfall and its various software development techniques.

2.3 Empirical literature review

Numerous scholarly works have proposed that the agile methodology offers benefits and advantages to various enterprises, particularly software development companies. This has been demonstrated in numerous research articles. Among the approaches that are most

frequently used and modified are Scrum, XP, and Kabana. According to Fustic, 60% of software companies employ agile because client requirements are continuously changing. Fustic conducted a brief comparison of the features of agile approaches with regard to software development environments. The organization's methodology has an effect on both corporate operations and personnel performance (Taaffe ,2019). According to , and other studies, there is a good possibility of a successful software project delivery when the industry employs good agile techniques. They also emphasize the need to keep an eye on things and have doubts about the kind of success we were concentrating on (Ruslan, 2017).

A critical analysis of the main schools of thought in project management is necessary to track the evolution of the agile methodology and its development over time. This brings us to the examination of how project management has advanced over the years, introducing new tools or improving upon time-honored methods and techniques. To illustrate the range of project management research they cover and the ways in which these schools of thought interact with one another, a few of these pertinent schools of thought will be briefly discussed (Anbari, Bredillet, and Turner 2008).

2.3.1 The optimization school: the project as a machine

The optimization school's empirical theory of project management centers on the methodical planning, scheduling, and implementation of project tasks in order to maximize efficiency(PMBOK Guide). During the 1940s and 1950s, the field of operations research is where modern project management first emerged(morris 1997). Optimization theory saw substantial advancements during and after World War II, especially in the US and the UK(Gass and Assad, 2005). During this time, optimization techniques like the Critical Path Method (CPM) and the Program Evaluation and Review Technique (PERT) were developed (PMBOK Guide).

The methodology and philosophy of project management within the Optimization School have been greatly influenced by textbooks like those written by (Cleland and King, 1983) and (Kerzner, 2009). In order to maximize project outcomes, these publications support a systems approach to project planning and control. The Project Management Institute's Project Management Body of Knowledge (PMBOK) Guide is regarded as the industry standard for project management. The Optimization School is the source of many PMBOK Guide components, especially those related to scope, time, and cost management (Project management institute, 2008).

2.3.2 The modeling school: the project as a mirror

Data-Driven Modeling is the process of representing project management systems using modeling approaches like System Dynamics and soft systems methodology (Eisner, 2008). complex models are used to simulate and analyze the behavior of complex systems, and they are based on data gathered from actual projects (Williams, 2002). Testing and Validation is To guarantee the correctness and dependability of models, real-world data must be used for validation (Williams 2007). This entails iteratively improving the models based on empirical data and comparing model predictions to observed project outcomes.

2.3.3 The governance school: the project as a legal entity

Observation and Research on Contract Administration, Examining the connection between project management and contract management was the focus of the governance school's initial activity burst (Turner, 2004). In order to better understand how contracts affect project outcomes, researchers started focusing their research on contract management from a project viewpoint(Turner, 2006).

Data-Supported Governance Mechanism Analysis, Seeing the project as a transient organization and looking at the governance structures of the project and the project-focused parent organization were the main goals of the second spurt of activity (Gerwin and Ferris, 2004). This required examining the transient character of project organizations and dissecting the client-contractor principal-agency dynamic (Garland, 2009).

2.3.4 The process school: the project as an algorithm

Organized Procedures, The establishment of organized procedures from project start to finish is the fundamental tenet of the Process School. Project management, supporters, is an organized procedure that turns ideas into reality (Turner, 2009). Like an algorithm solving a problem, it offers a path to reach desirable future states. Aspects of project management such as scope, organization, quality, cost, time, risk, and project and management life cycles are all covered by these organized processes(Meredith and Mantel 2006). Project Life Cycle This school firmly believes in the project life cycle idea. The main organizational principle used by Meredith and Mantel (2006) to arrange project management procedures is the project life cycle.

2.3.5 The contingency school: the project as a chameleon

Project Categorization and Typology This school's initial research efforts were devoted to comprehending project typology and classification (Crawford et al. 2005, 2006). Researchers

like Turner and Cochrane (1993) and Shenhar and Dvir (1996) examined various project kinds and project organizations. In order to guarantee that capabilities and strategy are in line, they have created project classification systems in more recent work (Crawford et al. 2005, 2006). Adjusting to Project Requirements, The Contingency School places a strong emphasis on the idea that since every project is different, management strategies and leadership philosophies must be modified to fit the demands of each one (Turner, 2009). This method promotes flexibility and adaptability in management techniques and opposes the idea that there is a single project management strategy that works for all situations.

2.4 Agile project management approach

Agile project management is a methodology where all jobs are divided into smaller parts and completed in stages, starting from the first and ending with the most difficult step. These meetings are commonly referred to as "sprints," which is the name given to iterations in the precise and well-liked agile development methodology known as Scrum (Schwaber, 2004). Scrum is a project management framework that emphasizes accountability, teamwork, and incremental progress toward a clear objective. The Scrum process encourages users to make the most of what they have and to continuously assess what is and is not working. One important aspect of the process is communication, which is distributed through events, or gatherings. (Beck and colleagues, 2001).

2.4.1 Agile planning

Agile project management uses a limited planning strategy that stays within the realm of known elements (Cohn, 2006). The onerous challenge of planning and predicting the development of a new software project is compounded by our preconceptions about projects.As new information becomes available, ongoing changes are made on an agile project. The incremental planning process utilizes the new knowledge that the project generates, whether it is about the project or the product (Girum, 2018).

Daily, iteration, release, and product planning are carried out by an agile team under the direction of the project manager. In addition, he said that in order to measure how well the organization's vision and the executed project coincide, planning might also encompass portfolio and strategy (Girum, 2018).If the planning goes far beyond the planner's horizon and does not allow for time for the planner to examine present reality or the newly formed horizon and make modifications, there is a danger connected with poor or erroneous planning. It is necessary to develop the plan gradually.

2.4.2 Agile practices

Agile projects are distinguished from typical projects due to a more open procedure. The procedures the project team follows to accomplish the project's objectives are outlined in this set of practices that make up the process. This agile method helps define the project scope at every stage of the project's life cycle, especially for software projects, where the objective is to provide a functional software product. A software project's scope, duration, cost, and quality are all crucial factors to take into account (Henriksen, A. & Pedersen, S.R. 2017).

According to the Project Management Institute, there are five process categories that make up traditional project management: initiating, planning, executing, monitoring and controlling, and closing. These are completed both incrementally and linearly in traditional project management. These are carried out more adaptively and continuously in agile project management (Wysocki, 2014). Agile techniques are repetitive and progressive. Iterative because the scope of each batch is set just prior to the start of each loop, and incremental because the work (scope) is pre-divided into smaller units of work (Henriksen, & Pedersen, 2017). Because of its repetitive nature, the technique is highly adaptable.

2.4.3 The Agile triangle

the notion of the "Agile Triangle," which is a development of the conventional project management "Iron Triangle." Agile icon Jim Highsmith came up with the initial concept for this, saying that "many agile teams have found themselves in a dilemma." On a single.They are instructed to adhere to the established, conventional Iron Triangle framework of scope, schedule, and cost, but they are also encouraged to be nimble, flexible, and adaptive. They are essentially being instructed to "be adaptable in the smallest box." While managers and executives measure success against one set of goals, agile teams strive to satisfy another.The "Iron Triangle" of conventional project management is expanded upon by the "Agile Triangle."

Jim Highsmith came up with the initial concept, saying that "many agile teams have found themselves in a paradox." They are instructed to adhere to the predetermined, conventional Iron Triangle framework of scope, time, and cost while still being nimble, flexible, and adaptive. They are essentially being instructed to "be flexible in a very small box." (K.D., 2021).

Our perspective of success is changed by the Agile Triangle (Highsmith, 2002). The Tradition Iron Triangle will no longer be appropriate, as was previously mentioned. The three

limitations in the Tradition Iron Triangle are cost, schedule, and scope. If we take these three limitations into account as the primary project success determinants, we will lose sight of the primary goal and purpose for why the agile methodology was created.

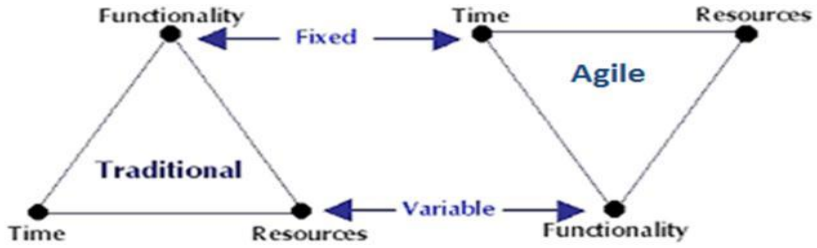

Figure 2;Conceptual differences between TPM and APM

Source: Jim Highsmith, 2010 agile triangle

According to Jim Highsmith, the Iron Triangle's end points would include the following if Agile were applied:

1. Value: the release of a product or deliverable that has value for the customer.

2. Quality - consistent provision of superior and versatile products.

3. constraints: the conventional scope, budget, and timeline.

Agile teams ought to prioritize project release over adhering to the iron triangle, according to this viewpoint. Constraints are the single end point of the agile triangle that would result from the collapse of the three iron triangle end points.The project's objective of achieving the value and quality of the deliverable that are most important to the stakeholders and that call for extra care is defined by the other end points. Jim Highsmith contends that Agile teams should avoid being limited by the iron triangle and instead concentrate on creating a releasable product. One vertex of the agile triangle known as constraints is formed when the three ends of the iron triangle collapse. Since the other end points—value and quality, for example—are more significant to the stakeholders and require greater consideration, they define the ultimate aims.

2.4.4 Agile manifesto

A group of developers got together in 2001 to talk about the prospects for a fresh approach to software development. One of the primary outcomes of this meeting was the agreement to use the word "agile," and these methods were less process-heavy than previous methods

tended to be. This phrase would be used to describe the type of approach that could react fast to modifications in the needs of software projects. The creation of the Agile Manifesto, which outlined the fundamental principles of agile development, was another significant result of this meeting (Beck and Andres, 2001).

Better ways to develop software are being discovered by doing it yourself and assisting others in doing so by placing a higher value on people and their interactions than on procedures and equipment, Functional software rather than extensive documentation, Collaboration with customers during contract negotiations, Adapting to changes instead of adhering to a plan.

The aim of the agile approaches was to tackle the fundamental values outlined in the manifesto. Initially, a clear embrace of collaborative development that prioritized team members and people over development procedures and tools could be seen in the manifesto. This is due to the fact that people are the ones that typically respond to company needs, and as a result, they are the ones who drive the development process through their skills. Rather of prioritizing procedure and tools over other factors in order to promote progress, the team would become less adaptable to new developments and hence less capable of satisfying customer expectations (Misra, 2012).

The second manifesto concept promoted and fostered a lean mindset. Its goal was to cut down on the labor and materials used for documentation production, which was occasionally seen to be unnecessary. Before agile, documentation required the preparation of technical requirements and specifications, interface design documents, test plans, and documentation schedules. Each document also needed to be approved, which took a lot of time. Documentation was limited to what was strictly essential and was completed with a lean mindset (Abrahamson, conboy and Wang, 2009).

The third manifesto concept describes a client who participates and works together during the project's development phase, which they had requested. Because the client is typically a daily team member who attends all team meetings, it is much easier for the development team to fully satisfy the customer's expectations (Tarne, 2015).

The fourth and last point of the manifesto argues that modifications invariably enhance and augment a project's worth. Before agile gained popularity, change was typically seen as costly and should be avoided at all costs. The goal was to create intricate, precise plans with clearly specified elements, guaranteeing that the outcomes would be delivered in a specific order. As a result, it was decided that accepting the reality that uncertainty in software

development should be a part of the plan and that adopting an open mindset to change was important (Denning, 2016).

Despite the Agile Manifesto's extensive nature, some critics point to the idea of "corporate memory loss" that may result from a lack of emphasis on creating high-quality design documents and models, particularly when dealing with large, complex software (Keefer & Authority, 2003). The following areas where agile procedures are limited based on their research into the agile manifesto (Turk, France, and Rumpe, 2002);

- Restricted ability to accommodate distant environments: Agile methods require face-to-face contact. Creating and preserving quality documentation can help remote teams stay in sync with one another and the project. Combining offshore with agile development is quite challenging, even with this advice (Moore & Barnett, 2004).
- Insufficient assistance for creating reusable artifacts: Agile processes focus on certain software issues. Because reusable artifacts are used in many different applications, where prone to errors components could have an adverse effect, a high focus is placed on the quality of the product. High-quality software can be produced using agile procedures, but it is unclear how to apply them to reusable artifacts (Spayd, 2003).
- Insufficient assistance for growth with big teams: Agile methods typically function well in small, closely-knit teams. It appears that traditional methods work better when it comes to leading big teams. Good documentation methods, architecture-centric development, and change control procedures may be useful tools for reducing latency and communication gaps. Nonetheless, the team's agility may be impacted by these tactics (Schwaber, 2004).

Organizations have been pursuing the objective of developing repeatable and simplified procedures for decades (Highsmith, 2003). The differences between agile and traditional methods imply that in order for an organization to successfully implement agile methodologies across the board, it will need to reconsider its objectives and reorganize its managerial, technological, and human resources (Nerur, Mahapatra & Mangalaraj, 2005).The key advantages of adopting agile development in projects have been the high degree of adaptability to change and the quick delivery of business value, which have exceeded the difficulties associated with non-collocated development teams (Fowler, 2006).

Because of the difficulties with more traditional software project approaches, like waterfall, people are now adopting agile methodologies instead, which are more established, modern, and comparatively rapid. The agile methodology emerged in response to growing demands for innovations and project impacts (Spundak, 2014). As projects grew larger, a more adaptable strategy was required. According to recent research, agile approaches and practices are useful in project management, particularly when handling the complexity of contemporary software and the quickly evolving business environment.Project management has become more important due to the crucial nature of software development projects, which has increased the demand for project management techniques. The agile methodology, which has gained popularity, makes sure that new difficulties in development are addressed while guaranteeing quick turnaround times and frequent modifications throughout the process. There are some distinctions between the various agile approaches. All in all, the iterative nature of the agile techniques' work process necessitates regular updates from the client (Beck, 2001).

The goal of empirical research on agile project management is to provide a logical and scientific perspective on software engineering processes and techniques (Salo, 2004). Agile project management techniques are adaptable and encourage last-minute adjustments. Agile methodologies encourage regular collaboration and direct, in-person communication. Moreover, agile requires regular evaluation to assess what was accomplished and what could be improved upon and used more effectively in the future (Stocia, 2013).

Agile methodologies are often regarded as effective on a global scale. Due to innovations in software development, agile approaches have gained increased traction and acceptance globally. As a result, organizations now depend on software innovation to provide them a competitive edge (Denning, 2015). Most IT specialists and project managers favor agile over other methodologies like waterfall (Jeremiah, 2015).The idea that agile fosters cooperation and teamwork and is more customer-centric has been the driving force behind adoption. Agile techniques are said to be the primary method used by the vast majority of IT businesses surveyed in their software development projects. The reasons for adopting agile are that it guarantees excellent software quality, increases customer satisfaction, and fosters better teamwork (Jeremiah, 2015).

Agile approaches are very appropriate in project-oriented businesses where most projects are often completed by small development teams since they are designed to manage small teams. Small teams can divide large projects into smaller, more manageable feature sets by

implementing agile development techniques like scrum, and then concentrating on producing these features as quickly as possible (Beck and Andres, 2012).

Software engineers prefer the adoption of agile methodology, Some argue that there is no one right way to implement this kind of methodology, but if there is, it needs to be followed to the letter to avoid unintended consequences (Mbelli and Hira, 2010). Due to the lack of local technology project-based businesses, there has been little to no research done in Ethiopia regarding the adoption and practices of agile project management methodologies, despite the fact that the majority of available literature materials concentrate on the adoption of agile practices globally.

According to some, there aren't enough case studies on agile software projects in the existing body of research (Layman, Williams, & Cunningham, 2006). Although this is the case, a small number of studies empirically examine agile methods, including scrum. For example, number of intriguing findings from an empirical study of Scrum embedded software development organizations (Salo and Abrahamsson, 2008) . The authors, for example, show that 27% of respondents claim to use Scrum primarily or systematically throughout the project, while 77% of respondents who have used Scrum report positive experiences. Nonetheless, there are still not enough empirical investigations.

The "Agile Manifesto"'s set of guiding principles is where agile methodologies get their distinctive qualities. Using simple design principles, a high number of releases in a short amount of time, extensive refactoring, pair programming, test-driven development, and viewing change as an advantage, the authors of (Boehm & Turner, 2003) identify fundamental concepts to agile specifically for software projects. These concepts can be applied to mobile application projects to provide incremental (multiple releases), cooperative (cooperation between team and client), straightforward (easy to understand and modify), and adaptive (allowing for frequent changes).There have been arguments in favor of and against the usage of agile development techniques in software development. The primary criticism of agile methods is that they are difficult to integrate with plan-based procedures, and there is a purported lack of scientific support for related activities and practices. It's true that some projects include elements of agile and plan-based methodologies; in these situations, it's important to strike a balance while applying each approach. Agile approaches do, however, offer a more structured and effective development strategy (Salo, 2006).

In essence, agile project management works best when it's difficult to pinpoint a deadline. Agile is an excellent option as well if the client wishes to be involved in the process and have the option to make last-minute changes. To reduce the likelihood of work having to be redone and to obtain feedback, an agile work load should have a clear structure and smaller tasks that the project team may build during sprint and present to the client. Empirical studies have demonstrated that in order to develop and implement the best available agile processes, a context-specific evaluation must be conducted at the project and organizational levels.

2.5 Research gap

Numerous opportunities exist to investigate the integration of agile techniques into project management methodologies, particularly in the context of intricate software projects. Given that fintech projects are predicted to be the next big thing in the economy, study on best practices and lessons gained is necessary in order to embrace and use agile project management approaches more frequently in Ethiopian contexts.

The agile principles employed in Ethiopia and those found in other regions of the world, as documented in the literature, differ greatly. This is combined with Ethiopia's still-low adoption rate and level, which means that businesses implementing financial technology projects aren't reaping the benefits of implementing the agile manifesto's modern project management approach principles. This necessitates a study that will close this contextual gap by evaluating the application of agile project management techniques in the context of the Amole project, which is one of the first fintech companies in Ethiopia's financial services sector to implement IT projects and use agile practices.

2.6 conceptual framework

The steps necessary to carry out the investigation are mapped out in a conceptual framework. The issue statement serves as the basis for the inquiry being reported, and the conceptual framework "sets the stage" for the presentation of the specific research question that guides the investigation. The relationship between the independent and dependent variables is explained in the conceptual framework that follows (McGaghie, 2001). According to this study, implementing agile techniques to encourage early delivery, continuous development, and teamwork improves project performance. The agile manifesto, which outlines the fundamental principles of agile project management techniques, will be demonstrated by the project management methodology if the assessment of agile practices yields positive results (Beck, 2001).

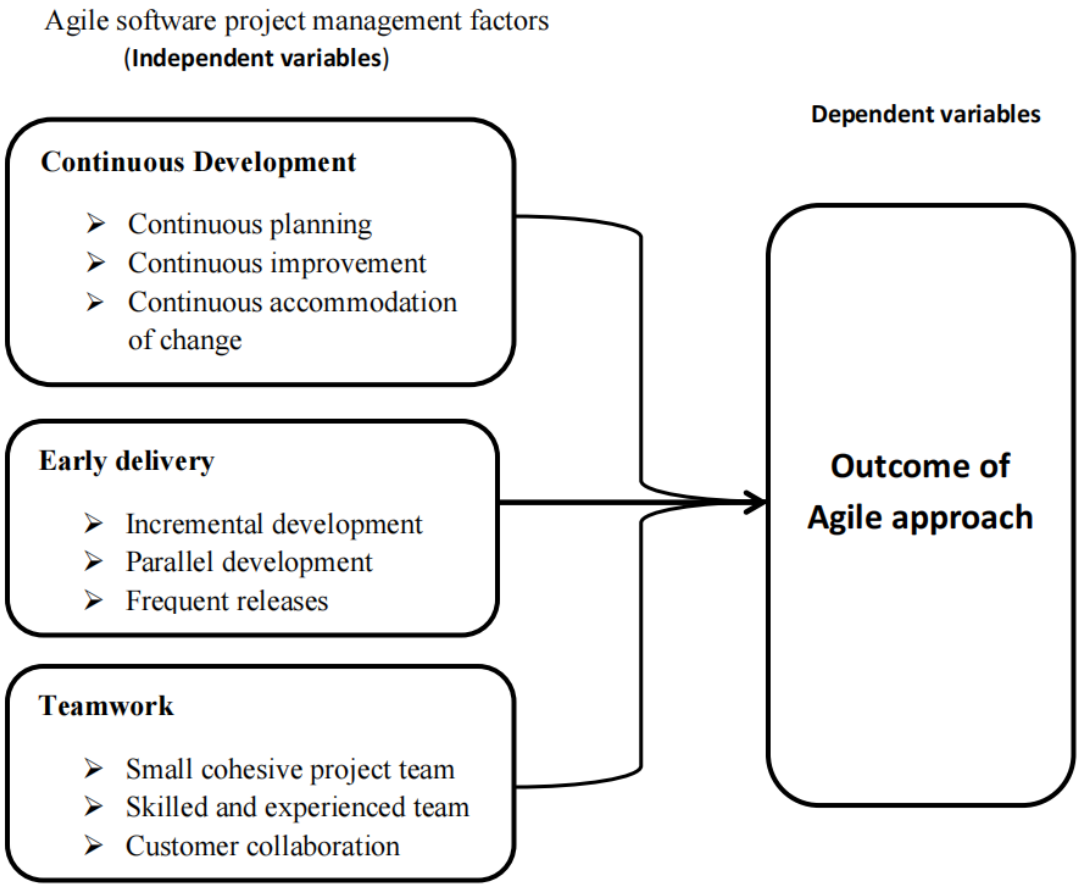

Figure 3: conceptual framework for agile project management software development and its adaption in Amole

Source this has been adapted from kaur&mehta 2011.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Research design

This study employed a descriptive research design within the case study methodology to thoroughly characterize and evaluate the identified problem. The descriptive approach is chosen for its ability to provide a detailed account of the problem's various dimensions, facilitating a comprehensive and accurate portrayal of the issues under investigation.

As outlined by Yin (1984), the case study research method, particularly within a descriptive design, is well-suited for examining modern phenomena in real-world contexts. By meticulously documenting and analyzing project situations, this methodology aims to capture the richness and complexity of the identified problem.

The descriptive case study design will focus on:

1. **Detailed Documentation:**
    - Comprehensive documentation of the problem's characteristics, contextual factors, and relevant details to create a thorough account.
2. **In-Depth Analysis:**
    - Systematic analysis of the collected data to derive insights and patterns that contribute to a holistic understanding of the problem.

This research approach ensures that the study's conclusions are not only grounded in real-world project management scenarios but also offer a nuanced and comprehensive perspective on the identified problem.

By means of a case-by-case, in-depth contextual examination of a small number of project situations and their connections. The case study research method is defined by Yin (1984) as a means of examining a modern phenomenon in the context of real-world occurrences.

3.2 Research approach

To enable thorough analysis, this kind of research used a combination of quantitative and qualitative data that will acquire from primary sources using various instruments and from every elementary unit in the population. To assess the effectiveness of the agile method in Amole, a quantitative method was employed in project management approach. A

standardized questionnaire with closed-ended questions utilizing a five-point scale will be used to survey stakeholders about the factors influencing agile methodologies across various project management processes. In order to obtain more insight on the topic beyond the questionnaire scope, a less structured and more flexible approach, a qualitative approach, was used. Using this approach, an open-ended questionnaire and interview will be conducted.

3.3 Source of data and gathering method

The primary data is the major source of data for this specific investigation. The targeted group was given well-designed questionnaires to complete in order to collect the primary data from the project case. Additionally, semi-structured interviews and additional open-ended questionnaires was administered to important project stakeholders and agile specialists. The questionnaire employed a Likert scale to measure the respondents' perceptions and opinions. The Likert scale, a widely used method in social science research, allows participants to express their agreement or disagreement with a series of statements on a numerical scale. Respondents is provided with a range of response options, such as "Strongly Disagree," "Disagree," "Neutral," "Agree," and "Strongly Agree." This scale facilitates the quantification of qualitative data, enabling a structured and comparable analysis of respondents' views. The study mostly rely on primary data that is collected and examined in as many scenarios as feasible to avoid misrepresenting the problem being studied. Cases have time and activity constraints, and the researcher used a range of data collection techniques to get comprehensive information (Stake, 1995). Secondary data for this study was drawn from a variety of literature sources, including journals, papers, books, magazines, and reputable websites. It is important to note that these sources contributed primarily to the theoretical framework, background knowledge, and contextual understanding rather than providing raw data.

3.4 Target Population of the Study

The Amole project team as a whole as well as the five major project stakeholders is the study's target population. Regarding the choice of five major project stakeholders, this selection is based on strategic significance and influence within the project. These stakeholders are identified as crucial decision-makers and contributors to the project's success. While the focus is on key representatives, insights from the broader team is also considered to ensure a holistic understanding of the project's dynamics. In Addis Ababa City, the primary project team will conduct the assessment. Out of all the financial technology companies, just one Fintech companyis examined in this research, along with its agile project management

methodology. The target group consists the project team members and the five major project stakeholders. After carefully identifying and selecting the project, subject matter experts with the necessary authorization was consulted, as well as project managers. Projects that are approved in relative expert opinion assessments that are closer to the subject under consideration in their application process of agile as a project management approach of project performance was selected. These projects was among those that aim to achieve organizational objectives through the implementation of agile projects. The study employed the census inquiry technique to gather information on the entire target population, primarily from the project team's point of view, after the project has been recognized and selected based on the project management style approach. As previously stated, the Amole project team as a whole as well as the five major stakeholders constituted the study's target population. In addition to the core development team and the five stakeholder representatives, there are 30 direct project team members who are in charge of organizing, carrying out, overseeing, and supporting the company's entire project execution. This information was obtained from the Amole HR database. Thus, standardized questionnaires was used to gather data from these target demographics, which served as the data source. It is important to underline in census inquiries that using a sample survey is useless when the universe is tiny (Kohari, 2004). A census is an exhaustive list of every individual in the population. When every topic in the investigation is addressed, there is no room for chance, and the highest level of accuracy may be achieved. As a result, census inquiry was used in this study, as shown in Table 1 below.

Table 1: Target population category

Participant category	**No of target respondents**	**Percentage**
IT development director	1	
Project manager	1	
Financial expert	3	
Central Coordinator	4	
Graphic designers	3	
Chief Content Officer	1	
Marketing manager	1	
System operators	4	
Call center contact managers	2	
Cybersecurity experts	3	
Assisting department heads	3	
Front-line project staff	4	
Sub Total of project team	30	80.77 %
Key project stakeholders	5	19.23 %
Grand Total	35	100 %

Source: Amole HR record, 2023

3.5 Data analysis method

The information collected using various techniques was examined using descriptive analysis tools and subject matter experts or seasoned agile professionals as consultants. Descriptive statistics was the primary technique used in the study to aid in data analysis. After the raw data has been categorized and tabulated, the results was analyzed and interpreted. Descriptive statistical techniques like frequency distribution, percentage, and charts was utilized to convey the data, followed by a thorough analysis, simply because this study is descriptive in nature.

3.6 Reliability and Validity

Using a variety of data gathering tools enables the researcher to combine, reinforce, and adjust some of the shortcomings and restrictions (Creswell, 2009). As a result, the items' internal consistency was examined. The idea behind internal consistency is that each scale's constituent items or indicators should measure the same thing, which means they should have a strong correlation with one another. A thorough literature analysis was carried out in order to improve the research instrument, test the questionnaire for clarity, and provide a coherent research questionnaire. Thus, integration was used to address validity and reliability difficulties, and both closed-ended and open-ended questionnaires, as well as cross-checking questions and semi-structured interviews, was used. Qualitative interviews conducted with specific respondents was be conducted. Furthermore, the data was linked with other methodologies in a specific unusual agile project instance to prove the validity of the process, overcoming the incapacity of a single-case design to deliver a generalizing conclusion.

3.7 Ethical consideration

Key ethical concerns, in Saunders' opinion, come up at several points along the course of a study effort. They said that the concerns were about participant privacy and consent, data confidentiality, and participant anonymity. As a result, the research procedures was directed by good moral precepts, such as informed consent, objectivity, respect, voluntarism, and confidentiality. Throughout the research process, the researcher made an effort to take ethical considerations into account. In particular, the researcher made sure that participants in the study are not coerced into taking part. The goal of the study was explained to the respondents, and they gave their permission to take part. Additionally, the researchers were guaranteed objectivity throughout the study; any attempt to skew the results was regarded as unethical and ought to be avoided. Additionally, the respondent received guarantees of anonymity and secrecy. The information provided will only be used for academic purposes, and their names were not mentioned in the study in any way.

CHAPTER FOUR

DATA PRESENTATION AND ANALYSIS AND INTERPRETATION

Introduction

The information gathered from the primary source for this study is presented in this part. Using descriptive statistics like tabulation, charts, and frequency distribution, the surveys are examined for trends in the respondents' responses. A detailed analysis is then conducted in accordance with the agile manifesto and its tenets. Furthermore, summaries that are helpful in this research will be provided, and the conclusions for the next section that will elaborate on the work's findings will also be covered. The information gathered from the five project stakeholders and the primary project team will be presented individually for the purpose of simplicity. These findings will then be elaborated upon and provided in further detail in the research's final sections, which also highlight the study's specific implications.

4.1 Return Rate

35 respondents each received 35 questionnaires; all 35 (100%) of the questionnaires that were sent out were returned. As a result, the data that was administered and returned by the representatives of the main project team and the stakeholders will serve as the basis for the analysis that will be made in the next chapter.

Table 2. return rate

	Total No of Population	Sample taken	Returned Questionnaires	Questionnaire not returned	Not properly Filed questionnaire
Total respondent	35	35	35	0	0

Source: Own survey, 2024

4.2 Demographic Profile of Respondents

The demographic component comprises the following variables: age, gender, job experience, and educational attainment. An overview of the responses for each of these variables is provided in the table below.

Table 3 - Overview of the demographic data

Demographic variable		Frequency
Gender	Male	22
	Female	8
Age	18-30	16
	31-40	9
	41-50	5
	>51	0
Educational Level	Diploma	6
	Degree	17
	Masters	7
	PHD	0
Work Experience	<5 years	19
	5-10 years	11
	11-15 years	0
	>15 years	0

Source: Own survey, 2024

4.2.1 Gender of respondent

The purpose of the survey was to assess how well agile project management techniques worked with AMOLE's software development methods. The survey emphasizes a primarily male viewpoint with 22 male and 8 female respondents, or, provided the numbers are correct, 73% and 27% of the sample, respectively. However, the emphasis stayed on examining the input from both sexes in order to extract knowledge about the use of agile methods. The replies probably emphasized the advantages and difficulties of agile methods, maybe exposing a consensus regarding the effectiveness of iterative development and highlighting gender-specific viewpoints on cooperation and project dynamics.

The study would highlight, in spite of the apparent gender disparity in respondent demographics, the necessity of gender-inclusive analysis in software development assessments. The study intends to provide a thorough understanding of agile methodology outcomes at AMOLE by taking into account a variety of experiences and points of view. This will enable well-informed decision-making for future project management strategies.

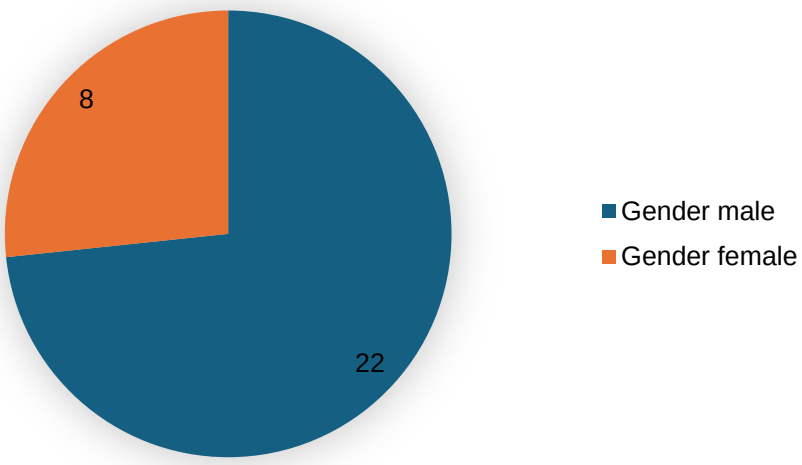

Figure 4- Gender of respondents

Source: Own survey, 2024

4.2.2 Age of respondent

Out of the thirty replies gathered, half of the participants disclosed their age. An analysis of the data showed that fifteen of the respondents, or fifty percent of the subgroup, were between the ages of eighteen and thirty. This age group probably makes up a sizable percentage of AMOLE's workforce, demonstrating the prevalence of younger workers in software development positions. Furthermore, nine responders, or thirty percent of the group that provided an age range, were between the ages of thirty and forty, suggesting a large presence of professionals in the middle of their careers. Moreover, five responders (17%) were between the ages of 41 and 50, indicating a lesser but yet significant representation of seasoned workers inside the company.

Particularly, the sample biased toward younger and mid-career adults as there were no responders over the age of 50 (>51). In the context of AMOLE's software development, this demographic distribution emphasizes how crucial it is to take age diversity into account when evaluating the results of agile approaches in project management. It is possible to get important insights into organizational dynamics and develop strategies for improving project management techniques by having a thorough understanding of how various age groups view and engage with agile practices.

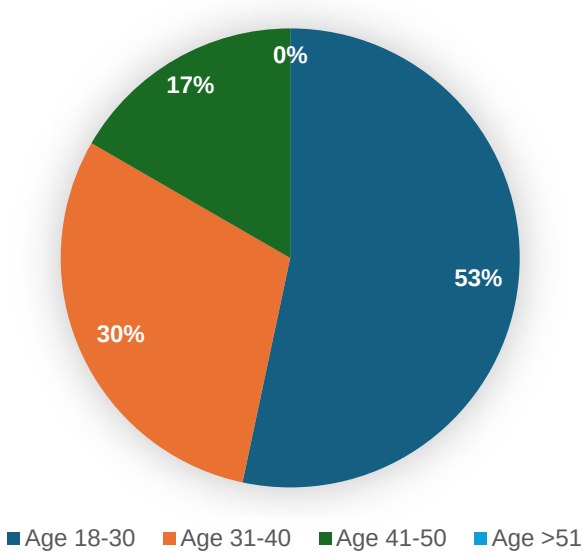

Figure 5- Age of respondents

Source: Own survey, 2024

4.2.3 Education level of respondent

Thirty participants in total gave the educational backgrounds of the responders. 20% of the sample possessed diplomas (6 respondents), followed by bachelor's degrees (17 respondents) with 56.7% and master's degrees (23.3%) with 7 respondents. It's interesting to note that none of the responders had a PhD. This distribution indicates that the workforce of AMOLE is primarily composed of people with bachelor's degrees, with master's degree holders making up a sizable portion of the workforce.

The lack of responders with PhD degrees may be a reflection of the usual educational background in the AMOLE software development area, underscoring the significance of taking educational background into account when assessing the results of agile approaches in project management. The study can contribute to a more thorough investigation of the deployment of agile methods inside AMOLE's software development processes by better contextualizing the viewpoints and insights given by taking into account the educational variety among participants.

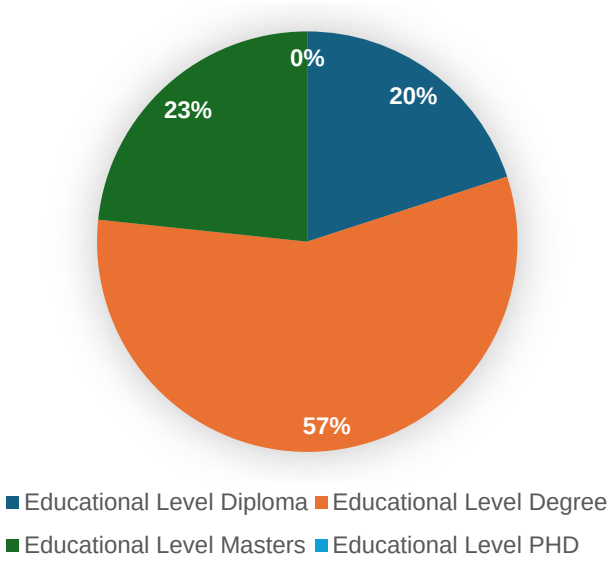

Figure 6- Education of respondents

Source: Own survey, 2024

4.2.4 Work experience of respondent

All thirty participants disclosed information about their employment experience to the respondents. According to the split, 19 respondents, or 63.3% of the sample, had fewer than five years of experience, and 11 respondents, or 36.7%, had between five and ten years of experience. Remarkably, neither respondents with more than 15 years of experience nor those with 11–15 years of experience were present. Given the context of AMOLE's software development projects, this distribution suggests a rather young workforce, with the majority of responders being early- to mid-career professionals.

The lack of people with more than ten years of work experience could be a reflection of the nature of the business or the company itself, indicating that professionals in the early phases of their careers at AMOLE are more likely to use agile approaches. In order to contextualize respondents' viewpoints on the implementation of agile methods and the efficacy of project management, it is imperative to comprehend the distribution of work experience among them. This will yield valuable information for improving strategies within the organization's software development processes.

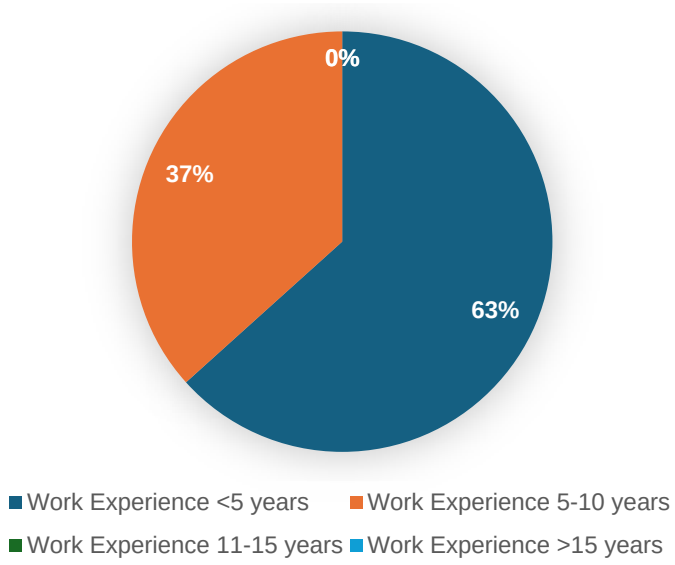

Figure 7- Work experience of respondents

Source: Own survey, 2024

4.3 General viewpoints expressed on the agile method part one

The frequency with which agile project management techniques were used in the project best reflected the respondents' experiences of these techniques for their project endeavors. Likert scales of five points, from strongly disagree to strongly agree, are used for these questions.

Table 4: Respondents' general opinion statement of agile method part 1

Question	Strongly Disagree (F%)/(C%)	Disagree (F%)/(C%)	Neutral (F%)/(C%)	Agree (F%)/(C%)	Strongly Agree (F%)/(C%)	Mean	Std Variation
Q1. Less formalization of the IT project management process is necessary to enable it to adapt to changing needs faster.	0 (0%)/(0 %)	0 (0%)/ (0%)	2 (6.67%)/(6.67 %)	2 (6.67 %)/(13 .33%)	26 (86.67%)/(100%)	4.8	~0.748 3
Q2. Agile methodologies play a significant role in our project.	0 (0%)/(0 %)	0 (0%)/ (0%)	0 (0%)/(0 %)	6 (20%)/ (20%)	24 (80%)/(100%)	4.8	~0.748 3
Q3. Agile ensures that the final product is polished by accommodating needs changes at any point in the development process.	0 (0%)/(0 %)	0 (0%)/ (0%)	10 (25%)/(25%)	10 (25%)/ (50%)	20 (50%)/(100%)	4.2 5	~0.946 6

Q4. Agile best practices are implemented in our organization.	5 (16.67%)/(16.67%)	15 (50%)/(66.67%)	10 (33.33%)/(100%)	0 (0%)/(100%)	0 (0%)/(100%)	~2.167	~0.9806
Q5. Within the agile methodology, a project's outcome may be impacted by the technical proficiency and expertise of involved clients.	0 (0%)/(0%)	2 (6.67%)/(6.67%)	5 (16.67%)/(23.33%)	11 (36.67%)/(60%)	12 (40%)/(100%)	4.1	~1.2305
Q6. The efficacy of Agile is determined by the previous corporate culture.	0 (0%)/(0%)	0 (0%)/(0%)	2 (6.67%)/(6.67%)	12 (40%)/(46.67%)	16 (53.33%)/(100%)	4.467	~1.0197

Source: Own Primary Survey, 2024

4.3.1 Analysis of the team's overall perception of the agile method part one

Agility and adaptability are more important than ever in the modern IT project management environment. The purpose of our study was to find out how people felt about the formalization of IT project management procedures. With 86.67% of participants strongly agreeing and an additional 6.67% agreeing, the overwhelming answer highlights a significant shift in the group's perspective. The data clearly indicates that there is growing agreement about the need to provide IT project management some flexibility so that it can change course and adjust to the rapidly changing business and technology environments.

This clear trend towards reduced formalization could be seen as a reflection of the dynamic character of IT projects, which are subject to remarkably quick changes in needs, stakeholder expectations, and market conditions. The viewpoints of the respondents align with the agile concept, which asserts that adaptability is a critical component of effective project management. The extremely small percentage of neutrality (6.67%) adds credence to the idea that there is little ambivalence and strong belief in the principles of agility. The evidence also testify to the increasing realization that, even if formalization offers structure, it may unintentionally inhibit creativity and adaptability. The capacity to iterate quickly and adjust project outputs in line with real-time input is not only desirable but vital in an era where technology is evolving at a dizzying pace.

The study examined how Agile approaches fit within the project framework. The feedback was highly positive: 80% of participants said they were in strong agreement with the assertion that Agile approaches are important to our project, and 20% agreed. This data shows a strong support of Agile as a revolutionary force in project management, one that is essential to the organization's operational ethos rather than just an afterthought.

The large percentage of strongly agreed indicates that Agile's inherent worth is acknowledged. It is a sign of an organizational culture that has accepted Agile principles and experienced directly the many advantages they provide. The respondents seem to find great resonance in agile's emphasis on flexibility, incremental development, and cooperation. This suggests that agile approaches are more than simply theoretical concepts; they are useful tools that have been successfully incorporated into the project life cycle.

Furthermore, the lack of dissent or neutrality highlights the general agreement regarding the significance of Agile techniques. This kind of agreement is very important since it shows that everyone recognizes the value of Agile in improving project results. It implies that Agile approaches are now a mainstay of project management inside the company, having moved beyond the domain of preference. It refers to a company where Agile is not only used but also valued as a vital element of project success. The approaches are seen as a philosophy that supports the project management approach and encourages creativity, effectiveness, and adaptability rather than just a set of procedures.

The study focused on Agile's ability to improve the finished product by accepting modifications at any point during the development cycle. The results show a cautious but good endorsement of Agile's adaptability, with 50% strongly agreeing, 25% agreeing, and 25% staying neutral. This data implies that although Agile's ability to improve the end product is acknowledged, so are the difficulties and constraints that come with using this methodology. The fact that half of the respondents strongly agreed with this statement suggests that they valued Agile's iterative character, which permits constant improvement and refinement in response to changing requirements and ongoing feedback.

Although they acknowledged the benefits of Agile, the quarter of respondents who agreed did so with less vigour. They also acknowledged that the success of Agile is dependent on a number of factors, including stakeholder participation, team dynamics, and project complexity. Their agreement shows that they appreciate the flexibility of Agile, but they also realize that it is not a magic bullet for every project issue.

The remaining quarter's neutral position could be seen as a sign of either a lack of understanding of Agile's influence on product improvement or a reluctance to fully support it. This neutrality may result from past experiences when internal resistance or external limitations prevented Agile's promise of adaptability from fully materializing. It emphasizes a widespread conviction that Agile approaches are effective in producing a polished end product, balanced by an awareness of the practical realities that may affect this result. The answers emphasis how crucial it is to adopt Agile methods and create an atmosphere that will enable them to be implemented successfully.

In sharp contrast to the previous items, the poll inquired about how Agile best practices were being implemented throughout the company. A substantial level of scepticism was evident in the responses, with the majority of 50% disagreeing and 16.67% strongly disagreeing. Notably, none of the respondents agreed or strongly agreed with the assertion; just 33.33% stayed indifferent. Based on this data, an organization appears to be struggling with how to incorporate Agile methodologies into its current structures. The lack of affirmative feedback implies that although Agile as a concept is highly valued, there are still significant obstacles to be addressed in its implementation. The severe disagreement and disagreement show that even though Agile best practices make sense intellectually, there remain obstacles or opposition to their practical implementation.

The observed neutrality can be a reflection of a part of the organization that hasn't personally seen the effects of Agile best practices or isn't sure if they are successful. There could be a number of reasons for this, including inadequate resources, a lack of training, or a rift between the project teams in charge of carrying out these procedures and management.

The survey investigated how clients' technical know-how and proficiency affected the results of projects run using Agile methodology. With 40% of participants strongly agreeing and 36.67% agreeing that client involvement may considerably impact the project's outcome, the replies show an overall good opinion. 16.67% disagreed, 6.67% agreed, and none strongly disagreed, making up the smaller portion that was neutral.

This evidence indicates that the importance of technically competent clients in the Agile process is much appreciated. The considerable plurality's strong agreement suggests that clients with a solid understanding of technical issues can make meaningful contributions to the Agile cycle, improving collaboration and guaranteeing that the final product meets their needs and expectations.

More than one-third of the respondents agreed, which supports the notion that client expertise is not just helpful but possibly necessary for the Agile technique to work. It suggests that when customers are able to interact closely with the technical staff, they will be able to offer insightful opinions and suggestions that advance the project. The indifferent answers might indicate that, although useful, client knowledge is not the only factor in determining a project's success. These individuals might think that organizational support, resource availability, and team dynamics are additional important variables that contribute to the success of Agile initiatives.

The tiny amount of disagreement can point to a view that client technical expertise is not as important as other components of the Agile framework, or it might point to some difficulties incorporating client feedback into the development process. It emphasizes how crucial technical know-how and customer involvement are to the success of Agile initiatives. The information emphasizes how important it is to work with clients that are not just committed to the project but also have a technical grasp that enhances the development team's skills.

The study examined how the efficacy of Agile techniques is affected by the organizational culture that already exists. The replies show a high belief that the organizational culture has a substantial impact on Agile success, with 53.33% strongly agreeing and 40% agreeing. 6.67% of the sample remained neutral, indicating a degree of ambiguity or inexperience with the interaction between Agile and organizational culture.The significance of organizational culture in the adoption and efficacy of Agile approaches is highlighted by this research. The high degree of agreement indicates a knowledge that Agile is a mentality that needs a positive cultural environment to flourish rather than just a collection of procedures. It implies that those surveyed are aware of the necessity of an environment that promotes teamwork, adaptability, and ongoing education—principles central to the Agile methodology.

More than half of the participants strongly agreed, indicating a consensus that the adoption of Agile approaches may encounter major obstacles in the absence of a supportive cultural basis. This viewpoint is consistent with the idea that agile transformation necessitates a change in the organization-wide attitudes, behavior, and values in addition to process modifications.

The indifferent replies might point to an understanding that, although culture matters, there are other elements that also affect how effective Agile is. Some respondents could think that Agile's success also heavily depends on other factors including resource allocation, team dynamics, and leadership support. It emphasis how, in order to truly benefit from Agile, the

organization's culture must be in line with its tenets. Based on the evidence, it is necessary to make a conscious effort to develop a culture that values change, encourages teamwork, and gives teams autonomy so that Agile may thrive.

4.4 General viewpoints expressed on the agile method part two

The frequency with which agile project management techniques were used in the project best reflected the respondents' experiences of these techniques for their project endeavor. Likert scales of five points, from strongly disagree to strongly agree, are used for these questions.

Table 5: Respondents' general opinion statement of agile method part 2

Question	Strongly Disagree (F%)/(C%)	Disagree (F%)/(C%)	Neutral (F%)/(C%)	Agree (F%)/(C%)	Strongly Agree (F%)/(C%)	Mean	Std Variation
Q7. In our project, the agile methodology enhances self-organizing teamwork and creative discipline.	0 (0%)/(0%)	0 (0%)/(0%)	0 (0%)/(0%)	10 (33.33%)/(33.33%)	20 (66.67%)/(100%)	4.667	~0.9434
Q8. It is crucial that IT projects produce the appropriate output on schedule.	0 (0%)/(0%)	0 (0%)/(0%)	5 (16.67%)/(16.67%)	10 (33.33%)/(50%)	15 (50%)/(100%)	4.333	~1.2472
Q9. Project risk is decreased by the agile method as opposed to the conventional traditional strategy.	3 (10%)/(10%)	18 (60%)/(70%)	6 (20%)/(90%)	3 (10%)/(100%)	0 (0%)/(100%)	~2.3	~0.6403
Q10. I was able to control the problems of implementing Agile methodologies in the context of our project.	3 (10%)/(10%)	18 (60%)/(70%)	6 (20%)/(90%)	3 (10%)/(100%)	0 (0%)/(100%)	~2.3	~0.8345
Q11. An agile strategy enhances team motivation and morale.	0 (0%)/(0%)	0 (0%)/(0%)	2 (6.67%)/(6.67%)	12 (40%)/(46.67%)	16 (53.33%)/(100%)	4.467	~1.0152
Q12. The agile methodology can assist a business in accomplishing its project goal.	0 (0%)/(0%)	0 (0%)/(0%)	0 (0%)/(0%)	5 (16.67%)/(16.67%)	25 (83.33%)/(100%)	4.833	~0.3779

Source: Own Primary Survey, 2024

4.4.1 Analysis of the team's overall perception of the agile method part two

The study looked into how Agile methodology promotes creative discipline and self-organizing teams. With 66.67% of participants strongly agreeing and 33.33% agreeing with the statement, the results were overwhelmingly positive. This broad consensus indicates a strong organizational belief that Agile approaches improve team dynamics and innovation processes. The importance of the self-organization and creative discipline concepts that are at the basis of Agile approaches is demonstrated by this data. The lack of answers that are indifferent, disagreeing, or strongly disagreeing is very significant since it shows that people generally think that Agile is a useful tool for fostering an inventive and cooperative team atmosphere. The high degree of agreement indicates that participants have seen and felt the benefits of Agile on project outcomes and team performance. It draws attention to the idea that Agile approaches are about more than simply task management; they are also about fostering a culture in which teams are empowered to take initiative, work well together, and be creative. According to the research, Agile has played a significant role in promoting collaboration, dismantling organizational silos, and empowering teams to operate in a more flexible way.

The broad majority suggests that Agile has been successful in fostering in team members a sense of shared accountability and creative freedom. It suggests that the company has effectively used Agile to establish an atmosphere where teams may take initiative, self-organize, and move the project forward with a high level of independence and creativity.

The purpose of our poll was to determine how important it is for IT projects to provide the right product on time. There is substantial agreement among participants regarding the importance of this feature, as evidenced by their responses, with 50% strongly agreeing and 33.33% agreeing. A smaller percentage, 16.67%**, expressed no opinion, indicating reluctance or awareness of the challenges in completing projects on schedule while maintaining quality. This data emphasizes how important it is for IT projects to find a balance between product quality and timeliness. The overwhelming majority of respondents' strong agreement indicates that reaching deadlines without sacrificing the final product's integrity and functionality is an organizational goal. It implies that the participants place a high importance on the Agile methodology's capacity to improve project efficiency and output quality while adhering to time limitations.

Participants' pessimism about how Agile approaches affect project risk management is evident from the survey replies. The claim that Agile approaches lower project risk than traditional strategies was strongly disagreed with by 10% of respondents, and a significant 60% of respondents disagreed overall. This significant disagreement raises the possibility that Agile may not be seen as the safer method of handling uncertainty in the present project environment. According to the statistics, 20% of respondents had no opinion, which may indicate that they were unsure about Agile's suitability for their particular project or were unfamiliar with its risk management features. The minority of 10% who disagreed with the statement suggests that while there may be specific instances or situations where Agile has successfully reduced risks, these are not typical of the overall experience.

This disparity in opinions stands in interesting contrast to other poll sections where Agile approaches were largely viewed favorably. It demands a closer look at the elements influencing this impression. The kind of projects that are being worked on, the degree of maturity at which Agile is being implemented, or the degree to which Agile practices are in line with the organization's risk management system are all potential causes. It would be wise for organizations to look into the underlying causes of this view in order to remedy these findings. Improving Agile risk management training, making sure that Agile practices are better aligned with organizational risk rules, and cultivating an environment that values Agile's adaptability are all possible ways to make Agile seem like a risk-reduction methodology.

The capacity of the respondents to handle the challenges posed by implementing Agile techniques in their particular project environment. With a noteworthy 60% of participants expressing dissatisfaction and an additional 10% expressing extreme disagreement, the replies portray a very difficult picture. This implies that there have been significant challenges to the adoption of Agile methods that have not been adequately addressed or controlled. 20% of replies may be considered neutral, meaning they have neither encountered major difficulties nor thought the implementation process to be easy. It might also indicate a lack of active participation in the process of implementation or a conflicting feeling about the results. A minority of respondents have successfully navigated the hurdles of Agile adoption, as indicated by the limited percentage of agreement (10%).

These results prompt important inquiries regarding the type of difficulties faced. What makes it difficult to effectively control the implementation issues—the complexity of Agile concepts, resistance to change, inadequate training, or the lack of a supportive infrastructure? According to the research, most respondents seem to have been more impressed by the challenges of putting Agile's promise into practice than by its potential. This input is extremely helpful to firms since it emphasizes how important it is to have a more organized support system when undergoing an Agile transformation. Resolving the issues raised may need thorough training, a clear explanation of the advantages of Agile, and a phased implementation strategy. Furthermore, teams may be better able to manage and negotiate the complexity of Agile approaches if they work with seasoned Agile coaches and cultivate a culture of ongoing learning and adaptation.

The purpose of the study was to gather information about how Agile approaches affected team morale and motivation. Most participants (53.33% strongly agree, 40% agree) indicated that Agile techniques improve these aspects of team relations. The responses show a good trend. This broad consensus indicates that Agile approaches greatly enhance team spirit and engagement because of their focus on empowerment, cooperation, and incremental development. The negligible neutrality proportion (6.67%) may indicate a subset of respondents who have not noticed a discernible shift in morale and motivation as a result of Agile approaches, or it may represent a balanced perspective where the advantages are viewed as being on par with those of other methodologies.

The fact that there was no disagreement among the respondents is significant because it suggests that Agile is widely acknowledged for its beneficial effects on team morale and motivation inside the company. This agreement can be ascribed to the fundamental ideas of Agile, which place an emphasis on people and relationships above procedures and equipment, creating a climate in which team members are appreciated and seen as essential to the project's success. Businesses can use this knowledge to further advocate for Agile approaches as a way to increase employee happiness and output. Companies may sustain high levels of enthusiasm and morale, which are critical for the successful completion of projects, by carrying out Agile methods that emphasize team empowerment, frequent feedback, and visible progress.

The survey's last question asked about how well Agile methodology helps businesses accomplish their project goals. There was almost unanimous agreement among respondents that Agile plays a beneficial role in achieving project goals, as seen by the overwhelming 83.33% of respondents who strongly agreed and 16.67% of respondents who agreed. This resounding support is a reflection of the conviction that Agile's iterative methodology, which prioritizes customer participation and adaptability, is highly compatible with project strategic objectives. The fact that there were no neutral or negative answers shows how confident people are in Agile's capacity to generate value and successfully complete projects on schedule.

The data suggests that the principles of Agile, such as frequent delivery of working software, regular reflection on how to become more effective, and continuous adaptation, have resonated well with the respondents. This could be attributed to the tangible benefits observed in projects, such as improved product quality, increased customer satisfaction, and enhanced project control. This insight, which emphasizes Agile's potential as a catalyst for project success, is priceless for businesses. It implies that increasing funding for Agile methods, instruction, and resources might be a wise strategic choice to guarantee that project objectives are not just reached but surpassed.

4.5 General viewpoints expressed on the agile Approach effectiveness part one

The agile approach effectivness with which agile project management techniques were used in the project best reflected the respondents' experiences of these techniques for their project endeavor. Likert scales of five points, from strongly disagree to strongly agree, are used for these questions.

Table 6: Respondents' general opinion statement of agile approach effectiveness part 1

Question	**Strongly Disagree (F%)/(C%)**	**Disagree (F%)/(C%)**	**Neutral (F%)/(C%)**	**Agree (F%)/(C%)**	**Strongly Agree (F%)/(C%)**	**Mean**	**Std Variation**
Q1. All team members is aware of and agrees with the Agile philosophy, principles, and practices.	3 (10%)/ (10%)	18 (60%)/(70%)	6 (20%)/(90%)	3 (10%)/(100%)	0 (0%)/ (100 %)	2.3	~1.249 5
Q2. Using agile principles at work can be difficult.	3 (10%)/ (10%)	6 (20%)/(30%)	3 (10%)/(40%)	18 (60%)/(100%)	0 (0%)/ (100 %)	3.2	~1.326 6
Q3. The business needs to	2	5	4	19	0	3.3	~1.201

implement strategies other than agile.	(6.67 %)/(6. 67%)	(16.67 %)/(23. 33%)	(13.33 %)/(36. 67%)	(63.33 %)/(10 0%)	(0%)/ (100 %)	33	4
Q4. Project teams are interested in collaborating with agile approaches.	0 (0%)/(0%)	5 (16.67 %)/(16. 67%)	3 (10%)/(26.67%)	20 (66.67 %)/(93. 33%)	2 (6.67 %)/(1 00%)	3.6 33	~1.073 9
Q5. Agile project management techniques need to be regarded as the optimal working methodology.	0 (0%)/(0%)	3 (10%)/(10%)	3 (10%)/(20%)	20 (66.67 %)/(86. 67%)	4 (13.3 3%)/(100%)	3.8 33	~1.254 3
Q6. Project teams occasionally fail to recognize the advantages of Agile in their daily operations.	2 (5%)/(5%)	27 (67.5%)/(72.5 %)	5 (12.5%)/(85%)	3 (7.5%)/ (92.5%)	3 (7.5%)/(100 %)	2.4 5	~1.536 8

Source: Own Primary Survey, 2024

4.5.1 Analysis of agile approach effectiveness part one

The survey results indicate a substantial departure from the goal of universal acceptance when examining the degree to which Agile philosophy, concepts, and practices are acknowledged and supported inside project teams. Only ten percent of respondents agreed with the statement, indicating that team members only slightly support Agile approaches. This is further highlighted by the significant 60% of respondents who disagree, along with 20% who take a neutral position, suggesting a gap in comprehension or a lack of conviction. The lack of substantial agreement is especially concerning since it suggests that there may be a gap between the Agile principle and the team dynamics that exist today.

These discoveries have a wide range of consequences. One way to look at them would be as a result of inadequate knowledge and instruction on Agile techniques. Conversely, they can indicate a lack of willingness to adapt or a discrepancy between the team's operational philosophy and the Agile framework. According to the findings, a sizable portion of the team does not appear to have internalized or considered the Agile principles to be consistent with their work methods.The application of Agile approaches is severely hampered by this lack of agreement and understanding of Agile. It demands reflection and action from proponents of Agile and organizational leadership. It might take a concentrated effort in Agile education and observable advantages to close this gap. Moreover, identifying the underlying factors that contribute to this gap—whether they are structural, cultural, or educational—will be essential to developing tactics that promote an atmosphere that is more Agile-friendly.

Agile project management is a shining example of contemporary project management, pointing teams in the direction of increased adaptability, cooperation, and client satisfaction. However, our questionnaire's survey results present a clear picture of how Agile understanding is currently spread throughout teams. There is an alarming gap between team members' comprehension and acceptance of the Agile ideals and the philosophy, principles, and practices—just 10% of respondents agree with them.A resounding 70% of respondents—including those who strongly disagreed—indicate that there is a substantial lack of knowledge or alignment with Agile values. This shows that even if Agile approaches are widely supported, not every team member's perspective truly embodies the principles of Agile. There could be a variety of causes for this disparity. It could be the result of incomplete training or false impressions of what Agile actually comprises.

The fact that 20% of participants took a neutral position highlights the uncertainty surrounding Agile even more. It displays a condition of hesitancy or lack of commitment, which may be related to a lack of experience with Agile methods or doubts about their effectiveness. This neutrality can also point to a transitional stage in which team members are still assessing how Agile has affected their work. It is especially instructive that there is no significant agreement (0% highly agreed). It draws attention to the urgent need for programs that explain Agile approaches' concrete advantages while simultaneously serving as educational tools. Organizations need to create a culture where Agile principles are not only taught but also clearly used and reinforced in order to close this knowledge gap. A greater appreciation and understanding of Agile can be fostered by including team members in practical Agile experiences, interactive workshops, and visible success stories.

Agile methodology adoption in the workplace is frequently hailed as a revolutionary step toward effectiveness and flexibility. The answers to our survey show that there are difficulties along the way, nevertheless. A noteworthy 60% of participants concurred that it can be challenging to implement Agile principles in their day-to-day job. This feeling captures the real-world challenges that teams may run into while attempting to implement these approaches. The challenges that have been reported are complex. Teams frequently struggle with deeply embedded routines and practices that conflict with the adaptable and iterative nature of Agile. It will take time for there to be a fundamental transition in thinking and culture from the traditional, plan-driven approach to an adaptive one.

Furthermore, there may be tension resulting from Agile's collaborative requirements. Agile principles place a strong emphasis on regular communication, close collaboration, and great transparency. This can be a difficult adjustment for teams that aren't used to this kind of interaction or for individuals that operate in isolated contexts. It is human nature to be resistant to change, and this may be shown in the unwillingness to adopt Agile methods. The heterogeneous nature of teams and projects adds still another level of complication. Agile is a flexible approach, but it is not a universally applicable one. Its concepts might need to be modified to meet the particular requirements of each team, and it might work better for some projects and industries than for others. This customization calls for a thorough comprehension of Agile principles and the ability to use them wisely.

Agile development approaches are now synonymous with flexibility and customer-focused design in the quickly changing field of project management. The survey results, however, point to a more nuanced understanding of the limitations of Agile as a corporate strategy. Notably, 63.33% of respondents felt that their company needed to use techniques other than Agile, demonstrating that they were aware of the drawbacks of using just one methodology. The lack of strong agreement (0% highly agreed) could be more indicative of a circumspect acceptance than a firm belief. It implies that, despite their significance, agile approaches are acknowledged as only one component of a larger range of strategic instruments at an organization's disposal. This viewpoint is consistent with the practical belief that no single technique can provide a solution for every project issue.

The purpose of the survey's question was to measure the project teams' tendency for working together and utilizing agile approaches. The participants' comments show a strong consensus, with a sizable majority indicating agreement. In particular, 66.67% of respondents agreed with the statement, and 6.67% strongly agreed with it; these respondents' combined responses account for 73.34% . The resoundingly positive answer highlights how much project teams are interested in agile collaboration. Based on the data, it appears that the Agile principles—which prioritize flexibility, customer-focused development, and iterative progress—align with the team members' goals of a responsive and dynamic project management environment. The comparatively low percentages of disagreement (16.67%) and neutrality (10%) support the idea that Agile approaches are seen as the best way to collaborate on projects.

The fact that Agile approaches are being well received suggests that project management is undergoing a paradigm change, moving from rigid, traditional frameworks to more flexible, adaptive ones. The minuscule fraction of strongly disagreeing (0%) is especially significant because it indicates that the project teams questioned either fully embrace or are at least receptive to the Agile methodology.

The inquiry focused on the idea that Agile project management approaches are the best working methods. The replies provided provide a strong case for Agile's standing in the industry. 80% of respondents, or an astonishing 66.67% of respondents, agreed with the proposal, and 13.33% strongly agreed. This sizable majority confirms the widely held belief that Agile project management approaches are not only an option, but the best option.There is general agreement about the effectiveness of Agile methodologies, as evidenced by the low degree of disagreement (10%) and the lack of extreme disagreement (0%). 10% of the participants took a neutral position, which implies a cautious but open-minded approach and may indicate a phase of transition from traditional methods to Agile principles.

According to the statistics, Agile is recognized for its intrinsic benefits, which include its iterative nature, adaptability to change, and emphasis on client collaboration. These qualities are in line with the changing needs of project environments in the modern day. The broad consensus establishes Agile as the standard paradigm for project management, demonstrating a belief in its capacity to provide value and efficiency. Furthermore, the story that is beginning to emerge shows how project managers are thinking differently. It reflects a growing realization that Agile methodologies—with their flexible and people-centered principles—are a strategic instrument that may result in better project performance and happier stakeholders rather than merely being a fad.

The purpose of the survey question was to find out if project teams sometimes overlooked the benefits of using Agile approaches in their day-to-day work. A significant departure from the preceding questions can be seen in the responses, as the majority 72.5% expressed dissent or severe disagreement. In particular, 67.5% disagreed and 5% strongly disagreed, indicating that most respondents were aware of the advantages of Agile. This degree of disagreement suggests that project teams are not just aware of but also probably experiencing the benefits of Agile. The modest agreement 15%, which includes both strongly agree and agree replies, can be an indication of a minority opinion or certain situations where the advantages of Agile are not as clear-cut or are eclipsed by implementation-related difficulties.

The 12.5% of neutral comments may indicate a portion of the respondents who are unsure or have not noticed a discernible effect of Agile techniques in their day-to-day work. This impartiality could result from a number of things, including the projects' specifics, the teams' particular roles, or the maturity of Agile implementation. The information emphasizes how critical it is to understand and take use of Agile's advantages, which include greater customer satisfaction, improved communication, quicker delivery times, and increased flexibility. The majority of respondents strongly disagree with the assertion, indicating that they firmly believe Agile techniques provide real benefits that are visible in the day-to-day operations of projects. All things considered, the answers indicate that most employees understand the benefits Agile offers to their business. It draws attention to the fact that, despite the possibility of sporadic errors in appreciating Agile's full potential, the general consensus seems to be that Agile has a favorable influence on the project management process.

4.6 General viewpoints expressed on the agile Approach effectiveness part two

The agile approach effectivness with which agile project management techniques were used in the project best reflected the respondents' experiences of these techniques for their project endeavor. Likert scales of five points, from strongly disagree to strongly agree, are used for these questions.

Table 7: Respondents' general opinion statement of agile approach effectiveness part 2

Question	**Strongly Disagree (F%)/(C%)**	**Disagree (F%)/(C%)**	**Neutral (F%)/(C%)**	**Agree (F%)/(C%)**	**Strongly Agree (F%)/(C%)**	**Mean**	**Std Variation**
Q7. Project management procedures are enhanced by agile approaches.	0 (0%)/(0%)	0 (0%)/ (0%)	0 (0%)/ (0%)	6 (20%)/ (20%)	24 (80%)/(100%)	4.8	~0.7483
Q8. The ability to handle shifting priorities is improved by using agile methodologies.	0 (0%)/(0%)	0 (0%)/ (0%)	0 (0%)/ (0%)	6 (20%)/ (20%)	24 (80%)/(100%)	4.8	~0.7483
Q9. People are motivated by agile approaches for the duration of the project.	0 (0%)/(0%)	0 (0%)/ (0%)	0 (0%)/ (0%)	10 (33.33%)/(33.33%)	20 (66.67%) /(100%)	4.667	~0.9434
Q10. Agile approaches work well for in-person project team collaboration.	0 (0%)/(0%)	0 (0%)/ (0%)	0 (0%)/ (0%)	10 (33.33%)/(33.33%)	20 (66.67%) /(100%)	4.667	~0.9434
Q11. Your project case demonstrates a high level of customer dedication and	0 (0%)/(0%)	0 (0%)/ (0%)	2 (6.67%)/(6	12 (40%)/ (46.67	16 (53.33%) /(100%)	4.467	~1.0152

teamwork.			.67%)	%)			
Q12. The implementation of Agile Philosophy and Practices on this project is not restricted by any obligatory standards or other requirements.	0 (0%)/(0 %)	0 (0%)/ (0%)	0 (0%)/ (0%)	5 (16.67 %)/(16 .67%)	25 (83.33%) /(100%)	4.83 3	~0.37 79

Source: Own Primary Survey, 2024

4.6.1 Analysis of agile approach effectiveness part two

The purpose of the questionnaire was to investigate how well co-located project team members can collaborate when using agile approaches. The information showed a striking pattern: two-thirds (66.67%) of respondents strongly agreed that agile approaches have a beneficial effect on face-to-face collaboration, with all respondents (100%) acknowledging this. This broad agreement indicates that agile concepts, such in-person interaction, frequent iterations, and ongoing feedback, are not only well-liked but also seen as essential to the success of cooperative efforts inside project teams. When team members can communicate directly, there is a shared belief in the benefits of agile processes, which is highlighted by the lack of neutrality or disagreement.

The detailed responses indicate that agile methodologies, with their emphasis on adaptability and responsiveness, may significantly enhance the dynamics of team interaction. The ability to quickly address issues, adapt to changes, and leverage the diverse skills of team members is likely amplified in an environment where direct communication is readily available.

Furthermore, the high percentage of strong agreement could be reflective of the respondents' experiences where agile's collaborative rituals—such as daily stand-ups, sprint planning, and retrospectives—have led to more cohesive and synchronized teams. These practices, designed to keep team members aligned and engaged, seem to have a pronounced effect when conducted in person, leading to a more vibrant and productive team atmosphere.

Within the framework of Agile Philosophy and Practices, the survey question aimed to evaluate the degree of customer commitment and teamwork demonstrated in the project instances of the respondents. With 93.33% of participants agreeing or strongly agreeing with the statement, the results were overwhelmingly favorable and showed a high degree of teamwork and customer loyalty. According to a thorough analysis of the replies, 40% of the respondents agreed with the statement, and an impressive 53.33% strongly agreed. This substantial agreement implies that a strong dedication to customer satisfaction and a

cooperative team atmosphere are characteristics of the project cases submitted by the respondents. While the majority of respondents saw a good alignment with Agile values, a tiny percentage (6.67%) remained neutral, suggesting that some respondents have not yet completely experienced or recognized it.

The high rate of strong agreement may be the result of Agile methods that have been successfully integrated and emphasis people and interactions over processes and tools, as well as customer collaboration over contract negotiation. This connection with the Agile ideals is a sign of a collaborative project environment where project teams actively seek and value customer feedback in order to produce high-quality solutions.

The study tackled the possible limitations that mandatory standards or other prerequisites may place on the application of Agile Philosophy and Practices in the projects of the participants. The results were remarkably clear: 100% of participants indicated that there were no such limits, and 83.33% of them strongly agreed with that assertion. Based on the unanimous response, it appears that the projects in question are conducted in a setting that supports the complete implementation and use of Agile methodology. The respondents' agreement that their Agile processes are free from outside regulations that may otherwise limit their adaptability and responsiveness is evident from the lack of disagreement or neutrality. The high degree of strong agreement is indicative of a project environment that fully embraces Agile values, which include appreciating people and their interactions and adapting to change instead of rigidly adhering to a plan. This result suggests that the projects are probably reaping the benefits of all the benefits associated with Agile, such as enhanced stakeholder satisfaction, faster delivery timelines, and higher adaptability.

Furthermore, the absence of requirements may also indicate an organizational culture that supports and encourages project teams to modify procedures and practices to best meet the specific needs of each project. Because teams feel more in control of their work and the results they generate, greater levels of creativity and employee engagement are frequently linked to this degree of autonomy.

4.7 Statement of agile principles practice part one

The 12 guiding principles of the agile manifesto, which elaborate on the essential concepts of agile software development methodologies, are included in this section. With a 5-point Likert scale ranging from strongly disagree to strongly agree, the Table below details the respondents' experiences with these principles and how they apply them in their project environments.

Table 8: Respondents' general opinion statement of agile principles practice part 1

Question	Strongly Disagree (F%)/(C%)	Disagree (F%)/(C%)	Neutral (F%)/(C%)	Agree (F%)/(C%)	Strongly Agree (F%)/(C%)	Mean	Std Variation
Q1. Ensuring customer satisfaction through timely delivery of meaningful deliverables is the top goal.	0 (0%)/(0%)	0 (0%)/(0%)	0 (0%)/(0%)	10 (33.33%)/(33.33%)	20 (66.67%)/(100%)	4.667	~0.9428
Q2. Even at this late stage of development, the organization is prepared to accept evolving requirements.	0 (0%)/(0%)	0 (0%)/(0%)	4 (13.33%)/(13.33%)	12 (40%)/(53.33%)	14 (46.67%)/(100%)	4.333	~0.8819
Q3. The business typically meets deadlines for working deliverables.	0 (0%)/(0%)	14 (46.67%)/(46.67%)	16 (53.33%)/(100%)	0 (0%)/(100%)	0 (0%)/(100%)	2.533	~0.6669
Q4. Throughout the project, there is close collaboration between the project team and the consumers.	0 (0%)/(0%)	14 (46.67%)/(46.67%)	16 (53.33%)/(100%)	0 (0%)/(100%)	0 (0%)/(100%)	2.533	~0.6669
Q5. The organization trusts the team to complete the task at hand and offers a supportive and encouraging environment.	0 (0%)/(0%)	0 (0%)/(0%)	0 (0%)/(0%)	12 (40%)/(40%)	18 (60%)/(100%)	4.6	~0.6992
Q6. The project team believes that having face-to-face conversations is the most effective and efficient way for team members to share knowledge.	0 (0%)/(0%)	0 (0%)/(0%)	0 (0%)/(0%)	10 (33.33%)/(33.33%)	20 (66.67%)/(100%)	4.667	~0.9428

Source: Own Primary Survey Result, 2024

4.7.1 Analysis of agile principles perceived in the project part one

The data collected shows that while (33.33%) of respondents agreed with the question, more than half of them strongly agreed (66.67%) that the top priority is to satisfy the customer by delivering valuable deliverables early. Regarding the company's willingness to accept evolving requirements, even at this late stage of development, (46.67%)of respondents indicated strong agreement, (40%)indicated agreement, and (13.33%) indicated neutrality.

Shorter planning cycles make it easier for the business to adapt to and accept changes as they arise throughout the project. Frequent delivery of functional project deliverables in a shorter amount of time is crucial for market synchronization in order to meet customer demands and improve project success. The above table shows that (53.33%) of respondents in the study chose "neutral," while (46.67%) chose "disagree." This indicates that the company is not producing additional products, despite the fact that more than two-thirds of respondents indicated that the company is responsive to changes in frequency. This could cause a delay in time to market, which would negatively impact market synchronization because, in a company's industry, producing functional products more frequently in shorter amounts of time is essential to achieving agility.

In contrast to the conventional project management approach, close collaboration between the project team and customers is necessary throughout the project. But as the above table demonstrates, (53.33%) of respondents selected "neutral".(46.67%) of respondents said they disagreed. Working closely with the project team and balancing the work limit in progress to avoid an endless chain of non-prioritized open tasks, this shows that customers are not heard or given the opportunities to see the project being developed, share their input, and have a real impact on the end product. Regarding the incentive and assistance the organization offers to complete the task, as indicated by the above table, (60%) of respondents indicated they "strongly agree," and (40%) indicated they "agree." According to the responses, a company's supporting environment is far more crucial to completing a task. It shows that the project team is trusted by the organization to complete tasks independently. Robust teamwork, regular communication, and in-person interactions are critical components of the agile methodology. As a result, (66.67)% of respondents indicated that they "strongly agree" that the project team believes that in-person conversations are the most effective way for members of the team to share knowledge. The remaining (33.33)% of participants gave the "agree" response. This shows that in order to visualize work and foster greater collaboration, the project team believes that in-person conversations are the most effective way to communicate information.

4.8 Statement of agile principles practice part two

The 12 guiding principles of the agile manifesto, which elaborate on the essential concepts of agile software development methodologies, are included in this section. With a 5-point Likert scale ranging from strongly disagree to strongly agree, the Table below details the

respondents' experiences with these principles and how they apply them in their project environments.

Table 8: Respondents' general opinion statement of agile principles practice part 2

Question	Strongly Disagree (F%)/(C%)	Disagree (F%)/(C%)	Neutral (F%)/(C%)	Agree (F%)/(C%)	Strongly Agree (F%)/(C%)	Mean	Std Variation
Q7. The main indicator of our project's development is the working product.	0 (0%)/(0%)	0 (0%)/(0%)	0 (0%)/(0%)	10 (33.33%)/(33.33%)	20 (66.67%)/(100%)	4.667	~0.9428
Q8. Agile approaches encourage long-term project management practices in order to stay up to date with the market.	0 (0%)/(0%)	0 (0%)/(0%)	0 (0%)/(0%)	10 (33.33%)/(33.33%)	20 (66.67%)/(100%)	4.667	~0.9428
Q9. To improve agility, technological quality is continuously prioritized.	0 (0%)/(0%)	0 (0%)/(0%)	4 (13.33%)/(13.33%)	12 (40%)/(53.33%)	14 (46.67%)/(100%)	4.333	~0.9078
Q10. Simplifying the project increases the quantity of work completed.	0 (0%)/(0%)	0 (0%)/(0%)	3 (10%)/(10%)	12 (40%)/(50%)	15 (50%)/(100%)	4.4	~0.9944
Q11. Teams that can organize themselves produce the best artifacts.	0 (0%)/(0%)	0 (0%)/(0%)	0 (0%)/(0%)	8 (26.67%)/(26.67%)	22 (73.33%)/(100%)	4.733	~0.6419
Q12. The project team considers ways to improve its effectiveness on a regular basis and modifies its actions accordingly.	0 (0%)/(0%)	0 (0%)/(0%)	2 (6.67%)/(6.67%)	12 (40%)/(46.67%)	16 (53.33%)/(100%)	4.467	~0.8941

Source: Own Primary Survey Result, 2024

4.8.1 Statement of agile principles practice part two

The majority of respondents (66.67%) strongly agreed when asked if the working product should be the main indicator of progress in an agile project, and they believed that this would be a very beneficial issue for software projects. This was mainly because of the project's nature and the corporate culture, which respondents thought was especially in line with agile development concepts. Agile approaches are generally regarded as efficacious. Because of the innovation in promoting sustainable project management processes to keep up with the

market, the techniques have gained increased recognition and widespread implementation. According to the preceding table, the majority of respondents (66.67%) said they "strongly agree" in this regard. This demonstrates the value that an agile approach offers to keep up with changing market demands and client requirements at a steady pace. Small teams employing the concepts of continual design improvement based on highly complementary technical skill produce high-quality adaptive software. To increase project implementation agility, (46.67%) of respondents said they "strongly agree," and (40%) said they "agree." Technical excellence is continuously prioritized. This suggests that adoption will go more quickly and that project performance will increase.

According to the research findings displayed in the above table, (50%)of respondents believe that a project's simplicity maximizes the quantity of work completed. However, (40%) of respondents said they "agreed," suggesting that simplicity may not always increase productivity. Agile is a time-focused, iterative process that enables the incremental construction of products, one step at a time, and the delivery of smaller components. One of its key advantages is that it may adjust and modify at any time in response to customer input, market conditions, organizational roadblocks, and it can work with only a backlog of simple user stories that are relevant. The chart also reveals that, according to (73.33%) of respondents, self-organizing teams produce the finest artifacts. This suggests that most respondents believe self-organizing teams generate greater synergy than solo efforts. Self-organized teams have been demonstrated to enhance project performance, regardless of the precise artifacts and designs they generate as a team rather than just the aggregate of them. According to (53.33%) of respondents, the project team regularly evaluates how to improve its effectiveness and modifies its actions accordingly. However, forty percent of them believe that the project management strategy did not necessitate the intervals as much. This suggests that the project team manages requirements using backlogs and decides which needs to meet with the next delivery to guarantee that the most crucial features are given priority before the start of the next iteration.

4.9 Statement of the association between the agile project management and the outcome of the agile approach

The 16 guiding questions related with the variables, to know the association between the independent and dependent variables are included in this section. With a 5-point Likert scale ranging from strongly disagree to strongly agree.

Table 9: Respondents' general opinion statement between the agile project management and the outcome of the agile approach

Questions	Strongly Disagree (F)-(F%)-(C%)	Disagree (F)-(F%)-(C%)	Neutral (F)-(F%)-(C%)	Agree (F)-(F%)-(C%)	Strongly Agree (F)-(F%)-(C%)	Mean	Std Variation
Q1. Our team consistently engages in continuous planning to adapt to new information and changing requirements.	0-0%-0%	0-0%-0%	0-0%-0%	8-27%-27%	22-73%-100%	4.73	0.365
Q2. Continuous improvement practices are a core part of our development process.	0-0%-0%	0-0%-0%	0-0%-0%	12-40%-40%	18-60%-100%	4.6	0.489
Q3. Our team accommodates changes even late in the development process without significant disruption.	0-0%-0%	0-0%-0%	0-0%-0%	15-50%-50%	15-50%-100%	4.5	0.5
Q4. Feedback loops are regularly incorporated to ensure continuous development.	0-0%-0%	0-0%-0%	0-0%-0%	12-40%-40%	18-60%-100%	4.6	0.489
Q5. Incremental development allows our team to deliver usable product features early and frequently.	0-0%-0%	0-0%-0%	0-0%-0%	15-50%-50%	15-50%-100%	4.5	0.5
Q6. Parallel development activities are effectively coordinated to facilitate early delivery.	0-0%-0%	0-0%-0%	0-0%-0%	12-40%-40%	18-60%-100%	4.5	0.5
Q7. Frequent releases of our product have improved the overall quality and user satisfaction.	0-0%-0%	0-0%-0%	0-0%-0%	12-40%-40%	18-60%-100%	4.6	0.489
Q8. The ability to deliver early has positively impacted our project timelines and goals.	0-0%-0%	0-0%-0%	0-0%-0%	12-40%-40%	18-60%-100%	4.6	0.489
Q9. Our project team is small and cohesive,	0-0%-	0-0%-0%	0-0%-0%	12-40%-	18-60%-100%	4.6	0.489

which enhances our productivity and communication.	0%			40%			
Q10. The team members are highly skilled and experienced, contributing to the success of the project.	0-0%-0%	0-0%-0%	0-0%-0%	15-50%-50%	15-50%-100%	4.5	0.5
Q11. There is a strong level of collaboration between the team and customers throughout the project.	0-0%-0%	0-0%-0%	0-0%-0%	15-50%-50%	15-50%-100%	4.5	0.5
Q12. Teamwork and collaboration are essential elements of our agile practice.	0-0%-0%	0-0%-0%	0-0%-0%	12-40%-40%	18-60%-100%	4.6	0.489
Q13. The agile approach has significantly improved our project's overall success rate.	0-0%-0%	0-0%-0%	0-0%-0%	12-40%-40%	18-60%-100%	4.6	0.489
Q14. The flexibility of the agile approach has allowed us to better meet customer needs.	0-0%-0%	0-0%-0%	0-0%-0%	12-40%-40%	18-60%-100%	4.6	0.489
Q15. The agile methodology has enhanced our team's efficiency and productivity.	0-0%-0%	0-0%-0%	0-0%-0%	12-40%-40%	18-60%-100%	4.6	0.489
Q16. Overall, the outcomes of using agile practices have been positive for our projects.	0-0%-0%	0-0%-0%	0-0%-0%	12-40%-40%	18-60%-100%	4.6	0.489

Source: Own Primary Survey Result, 2024

4.9.1 Correlation Analysis

Correlation analysis is a statistical technique used to measure and evaluate the strength and direction of the relationship between two or more variables. We will calculate the correlation coefficients for the variables Continuous Development, Early Delivery, Teamwork, and Outcome of Agile Approach.

Table 10: Correlation matrix

	Continuous Development	Early Delivery	Teamwork	Outcome_of_Agile_Approach
Continuous_Development	1	0.71	0.68	0.793
Early_Delivery	0.71	1	0.7	0.758
Teamwork	0.68	0.7	1	0.765
Outcome_of_Agile_Approach	0.793	0.758	0.765	1

Source: Own Primary Survey Result, 2024

4.9.2 Detailed Narrative Analysis

Continuous Development

- **Correlation with Outcome of Agile Approach (0.793)**: There is a strong positive correlation between Continuous Development and the Outcome of Agile Approach. This indicates that continuous planning, improvement, and accommodation of changes significantly contribute to the success of agile projects. Teams that consistently engage in these practices are likely to see better project outcomes, aligning with the core principles of agile methodologies.

Early Delivery

- **Correlation with Outcome of Agile Approach (0.758)**: The correlation between Early Delivery and the Outcome of Agile Approach is also strong. This suggests that practices such as incremental development, parallel development, and frequent releases are highly effective in improving project outcomes. Early delivery helps in quickly gathering user feedback and making necessary adjustments, thus enhancing the project's success rate.

Teamwork

- **Correlation with Outcome of Agile Approach (0.765)**: There is a strong positive correlation between Teamwork and the Outcome of Agile Approach. This highlights the importance of small, cohesive teams with skilled members and strong collaboration with customers. Effective teamwork ensures better communication, coordination, and collective problem-solving, which are crucial for the success of agile projects.

4.10 demographic profile of stakeholder respondent

Table 12 - Overview of the demographic data

Demographic variable		Frequency
Gender	male	4
	female	1
Age	18-30	1
	31-40	4
	41-50	0
	>51	0
Educational Level	Diploma	0
	Degree	2
	Masters	3
	PHD	0
Work Experience	<5 years	2
	5-10 years	3
	11-15 years	0
	>15 years	0

Source: Own Primary Survey Result, 2024

4.10.1 Gender of respondent

Five participants completed the stakeholder questionnaire; four of them were male (80% of the respondents), and one of them was female (20%). The gender distribution of stakeholders in AMOLE's software development initiatives indicates a largely masculine perspective.

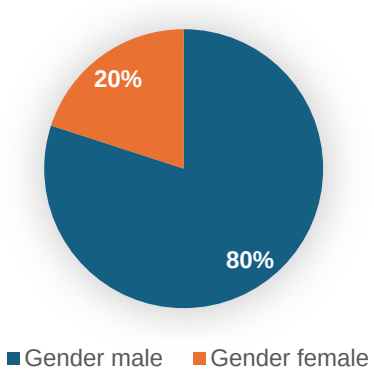

Figure 10- Gender of respondents

Source: Own survey, 2024

4.10.2 Age of respondent

Five participants completed the stakeholder questionnaire; four of them were male (80% of the respondents), and one of them was female (20%). The gender distribution of stakeholders in AMOLE's software development initiatives indicates a largely masculine perspective. Furthermore, 20% of the participants were between the ages of 18 and 30, and 80% were between the ages of 31 and 40. Notably, no one over 51 years old or between the ages of 41 and 50 participated. Regarding educational background, 40% of respondents had bachelor's degrees, 60% had master's degrees, and no responders had a PhD or a diploma. In terms of prior work experience, forty percent had fewer than five years, and sixty percent had ten or more years. This demographic breakdown offers insightful information on stakeholders' opinions on project management and the use of agile methods in AMOLE's software development processes.

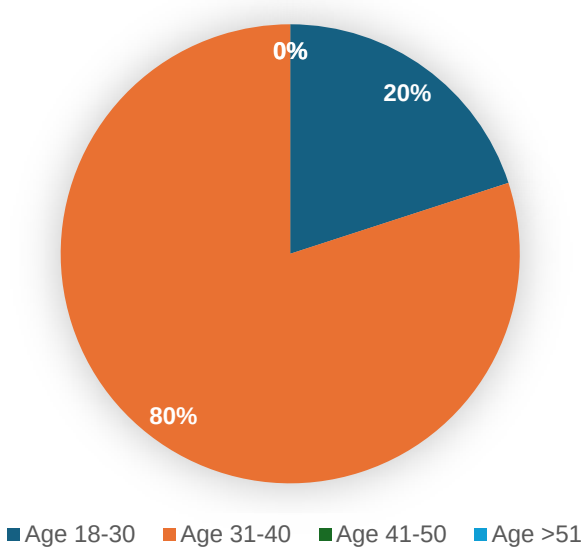

Figure 9- Age of respondents

Source: Own survey, 2024

4.10.3 Educational level of respondent

Five participants completed the stakeholder questionnaire, providing insights into their diverse educational backgrounds. There were no PhDs or diplomas among the responders. 40% of the participants (2 respondents) had bachelor's degrees, 60% had master's degrees (3 respondents), and no one had a PhD. The distribution of educational attainment suggests that

a greater proportion of the participants in AMOLE's software development projects hold advanced degrees, which could suggest a more profound comprehension of software development procedures and project management concepts. This educational split provides important background for understanding the viewpoints and insights supplied by stakeholders regarding the application of agile methods and the efficacy of project management inside the organization, especially when combined with the demographics of gender and age.

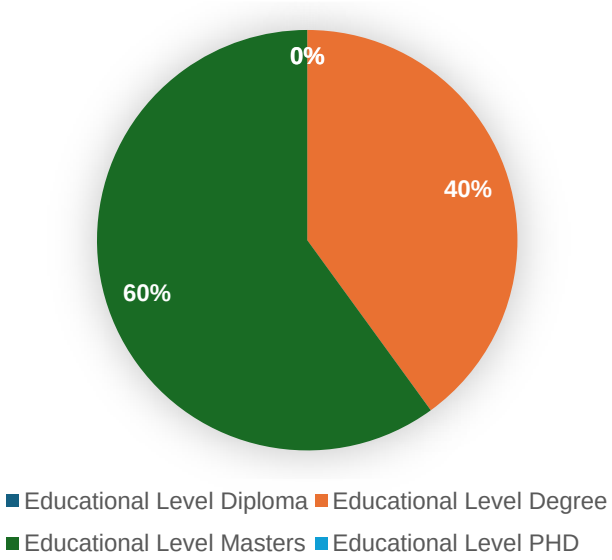

Figure 10- Gender of respondents

Source: Own survey, 2024

4.10.4 Work experience of respondent

Five participants' replies to the stakeholder questionnaire demonstrated a range of job experience levels. Of the participants, two respondents made up 40% with less than five years of experience, while three respondents made up 60% with between five and ten years of experience. Interestingly, none of the participants had more than 15 years of experience or those with 11–15 years. This distribution shows that the majority of the workforce at AMOLE is made up of people who are just starting out or are in the early stages of their careers in the software development field. The lack of respondents with a lot of work experience raises the possibility that opinions on the efficacy of project management and the use of agile methods are more heavily influenced by more recent experiences in the industry. When combined with the demographic data on age, gender, and educational attainment, this

split offers a comprehensive picture of the stakeholders and makes it easier to understand how they feel about different aspects of the organization's software development environment, including agile approaches.

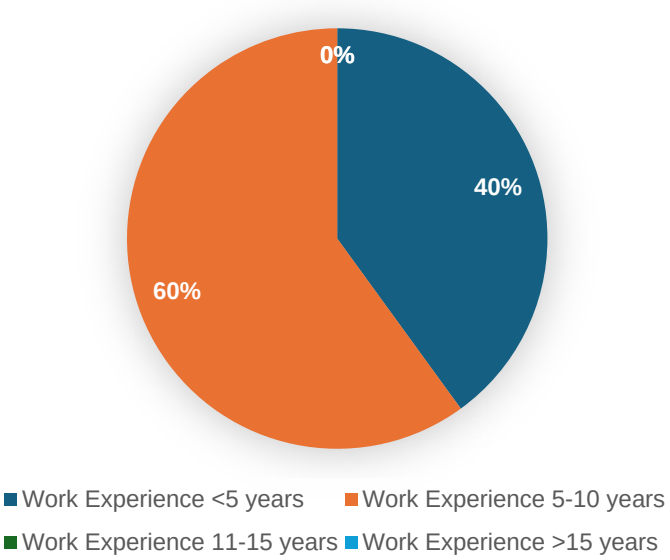

Figure 11 - Gender of respondents

Source: Own survey, 2024

4.11 Statement of agile practice

With a 5-point Likert scale ranging from strongly disagree to strongly agree, the Table below details the respondents' experiences with these agile practice and how it aligns with their project environments.

Table 13 - Overview of the demographic data

Questions	Strongly Disagree (F%) /(C%)	Disagree (F%) /(C%)	Neutral (F%) /(C%)	Agree (F%) /(C%)	Strongly Agree (F%) /(C%)	Mean	Standard Variation
Q1	0 0% / 0%	0 0% / 0%	0 0% / 0%	5 100% / 100%	0 0% / 100%	4	0
Q2	0 0% / 0%	0 0% / 0%	2 40% / 40%	3 60% / 100%	0 0% / 100%	3.6	0.24
Q3	0 0% / 0%	0 0% / 0%	0 0% / 0%	5 100% / 100%	0 0% / 100%	4	0

Source: Own survey, 2024

4.11.1 Analysis of agile practice perceived in the project

The gathered information creates an engaging story for the investigation of Amole Agile approaches' effects on organizational performance. The 100% concordance among respondents, which denotes universal agreement, highlights a noteworthy positive reception of Agile practices throughout the firm. The organization's operational structure now incorporates the Agile framework, which is distinguished by its collaborative and iterative processes. It is clear that the team members have found this integration to be beneficial, since it has created an atmosphere that supports improved performance. The organization's success has been largely attributed to the fundamental ideas of the Agile methodology, including adaptable planning, early delivery, and continuous improvement.

The survey's findings show that people generally think Agile approaches are effective. The consensus among the responders indicates that, in terms of performance outcomes, the Agile implementation has not only met but possibly surpassed expectations. This could be due to a number of things, including better communication, enhanced productivity, and a more adaptable attitude to change. Moreover, the Agile methods, often lauded for their flexibility, seem to have empowered the organization to navigate the complexities of project management with greater agility. The ability to rapidly adapt to changing requirements and priorities may have played a pivotal role in enhancing the overall performance.

The purpose of the survey's second question was to ascertain how Agile approaches affected project development costs in relation to Amole's deployment. The participants' comments reveal a varied viewpoint, with few strongly held beliefs supporting or opposing the financial consequences of Agile methods.A significant 40% of respondents had no opinion, indicating a degree of ambiguity or an absence of discernible influence on the expenses resulting from the Agile shift. This impartiality may result from a number of things, including the fact that Agile adoption is still in its early phases and cost benefits have not yet been fully realized, or it may represent a balanced viewpoint where cost savings are regarded as being offset by other expenses associated with Agile training and restructuring.

However, the majority of respondents acknowledge that Agile methodologies have a favorable impact on project development costs, as indicated by the 60% agreement rate. This might be a sign of less waste, better resource management, and an avoidance of over-engineering—all characteristics of incremental and value-focused Agile delivery. The lack of clear agreement or substantial disagreement in the responses may also indicate that there is a

need for more precise explanations of the financial advantages of Agile methodologies. The company could find it advantageous to look into the precise areas where Agile is said to be reducing costs, either directly or indirectly through advantages like quicker time-to-market and higher-quality products. the data paints a picture of cautious optimism regarding the cost implications of Agile methodologies. While a majority see a positive impact, the substantial neutral response warrants a deeper exploration to fully understand and communicate the cost dynamics of Agile within the organization.

The purpose of the third survey question was to assess how well the company plan and expectations for Amole Agile methodologies aligned. A clear image of a strategic match between the Agile methods and the business objectives is painted by the respondents' unanimous agreement, with 100% stating their concurrence. According to this agreement, the Agile techniques are not only well-liked but also seen as essential to the organization's strategic direction. The company strategy and the Agile methodologies are in harmony, demonstrating how the organization's strategic goals and the Agile principles of customer participation, change adaptability, and individual and interaction focus all work together.

The strong agreement may indicate effective communication and comprehension of the Agile framework inside the company, resulting in a mutual knowledge of how Agile may advance business objectives. It can also mean that the Agile approaches have been modified to fit the particular requirements and demands of the company, which would support its applicability and efficacy. Additionally, the connection of Agile techniques with corporate strategy suggests that these methods are essential to the organization's long-term goals rather than just operational strategies. This strategic alignment probably helps create a unified approach to decision-making and project management, which in turn helps Agile flourish and yield real outcomes. The data essentially depicts a business where Agile is firmly ingrained in the strategic fabric, serving as more than just a technique. The consensus that Amole Agile methodologies are well-positioned to meet the organization's ambitions and drive continuous success is emphasized by the 100% agreement on this topic.

4.12 Analysis of open ended questions of project stakeholders

The study's open-ended questions are presented in this part. The questionnaire was designed with the study's goals in mind. It is carried out in collaboration with the five main Amole project stakeholders in order to elucidate the topic further through the use of open-ended questions and supplementary sub-questions, each of which focuses on a distinct area of

interest that advances the goal of the study. An explanation of each open-ended question is provided for the sake of this research. The participants in this segment were chosen from among the representatives of each project partner organization. The participants in this segment were chosen from among the representatives of each project partner organization. These delegates were drawn from institutions such as Nayala insurance, ESHI, Key housing, Gojo B. Housing, Nile Insurance.

Respondents also indicated in an open-ended comment section that a wide range of perspectives needed to be gathered because the questions were distributed among the project stakeholders, each of whom was very knowledgeable about the particular area in which their organization represented itself while also having some points of perspective overlap with other organizations. This helped with information validation as well because it allowed the researcher to question participants to validate details that the core team had obtained.

The organizations of the project stakeholders existed far longer than the Amole project itself. This indicates that the Amole project has satisfied these organizations' autonomous business plans using agile project collaboration. These organizations had previously developed business strategies for their customers based on various strategic viewpoints, such as profit maximization, cost reduction, and customer reachability. because IT initiatives are now acknowledged by all firms as a strategic tool. These organizations also understand the need for modern Fintech systems, which employ IT initiatives to deliver solutions that are faster, easier to use, mobile, and less expensive. The explanation is straightforward: without integrating IT initiatives with the broader business objectives, their prior business plans were unable to produce the intended results.

The purpose of the first question was to learn more about the stakeholders' thoughts on potential outcomes in the event that Amole chose not to use an agile methodology for the project in which they are partners. The overwhelming majority of replies indicate that managing disparate financial services and their separate operations can be challenging, which may result in delays, inefficiencies, unsatisfied customers, and higher costs overall. Therefore, the primary benefit was Amole's adoption of agile, which allows the client to work directly with the development team to manage the project. Because of this cooperation, the company is better able to adapt to the demands of its projects and the ever-changing environmental landscape and maintain its inventive and competitive edge. All respondents gave positive answers when questioned about the principles of the agile project management technique, and the majority believed that banks and microfinance organizations would find great use for this

strategy. The primary cause of this was the combination of the agile methodology and the intricate nature of modern projects, which stakeholders believed to be especially consistent with the agile development principles.

The second question about representatives' interactions with the AMOLE project team exhibit any impediments behaviors that are consistent with the team's organizational culture. Every project management technique has process limitations, therefore recognizing and addressing these issues helps businesses maximize the benefits of the techniques they use. Regarding this, the majority of responses indicate that there are activities that act as bottlenecks between the agile method and project implementation. This implies that, in this evolving environment, there is no way to go back to the traditional waterfall method; instead, the focus should be on adopting methods that are acknowledged and that intentionally contribute to project success by fusing the agility of the intended agile culture with the values of the existing organizational culture.As a result, the primary issues that need to be resolved are: inadequate planning, insufficient time commitment for the full project duration, and a lack of formal, comprehensive documentation. These issues can be inferred from the respondents' main complaints, which were that the project was not appropriate for the company's current organizational culture or method of managing traditional projects. Despite this, other responders offer arguments claiming that the agile approach need not be used for successful implementation, particularly in financial projects where tight adherence to paperwork and careful planning is required. Agile methods are often the best option for fintech software development projects, according to the findings of the questionnaire that was presented in Chapter Four and general efforts to bring the approach closer to the project team's daily attention.

CHAPTER FIVE

SUMMARY, CONCLUSION, AND RECOMMENDATION

5.1 Summary of findings

In order to give an overview of the adoption of agile project management as a project management approach, this article looks at the practice from the viewpoints of the project team and important project stakeholders. This study set out to define and evaluate the agile project management method's and its management practices' uptake.The main findings from the case study entitled Examining the Outcomes of Agile Method Adoption for Fintech Projects are compiled in this chapter. The main goal of the research is to determine whether the agile project management approach that was successfully used in the project is also being fully or partially adopted while overseeing software development projects at Amole.This focused even more on how much it adds to the overall project success, and it was finished by 35 practitioners from the Amole project team as well as representatives from important stakeholder organizations. They also discussed the significance of the findings, compared them to earlier research studies on agile project management techniques, and explained how this information helps answer the research questions presented in chapter one. The software development industry has been the main driver of agile adoption, but there is growing research into the potential applications of this paradigm in other industries.

Agile project management techniques were discovered in this study to be effective in overseeing software development. The Waterfall (Traditional) and Iterative (Agile) techniques are the ones that have been established for building software-related projects. Thus, each strategy may be viewed in isolation as a response to a prior approach's shortcomings. Different hybrid project management techniques were subsequently discovered to be in use. Results from the financial industry's practical applications as well as scientific validation point to advantages of implementing agile.

The agile project management methodology in the Amole software development project scenario was thus described by means of fundamental questions. in particular, project management in a dynamic setting with a fast time to market. Consequently, the following are summary descriptions based on findings: Small teams using the principles of continuous improvement of design and testing based on quick feedback and change produced high-quality adaptive software, whereas knowledge management was more implicit and had less thorough documentation. One of the main outcomes of the study was that quality control,

interactive input requirements, design, and solutions were based on continuous iteration testing. The organizational structure was flexible and open, fostering cooperation and focusing on the financial technology sector.

The respondents' demographic profile showed a 70% male preponderance, which is consistent with the gender gap that is widely present in the financial and technology industries. The bulk of participants were in the 26–35 age range, which suggests that the workforce is both young and experienced. The majority of the team members had bachelor's degrees, with several also possessing postgraduate degrees, indicating a strong technical skill set. The team with the highest concentration of experience levels was found to have been involved in project management for three to five years. The survey results showed a broad agreement that agile approaches support the agile philosophy's cornerstones of flexibility, collaboration, and customer happiness. However, apprehension was voiced about the possibility of heightened effort and an apparent lack of documentation in contrast to conventional approaches. This contradiction implies that, despite the widely accepted advantages of agile, its drawbacks must also be addressed in order to arrive at a more well-rounded strategy. Additional confirmations of agile's advantages were observed in areas including quick market delivery, team morale, and responsiveness. On the other hand, the participants indicated challenges such as inadequate preliminary planning and difficulties monitoring advancement—elements that demand a careful use of agile techniques. These observations show a deep comprehension of both the benefits and drawbacks of agile.

Most people had positive opinions about the efficacy of the agile method, giving it high ratings for improving project transparency, team productivity, and customer engagement. However, it was noted that several areas needed further attention, including scope, risk management, and post-implementation assistance. This feedback suggests that although the agile approach is considered beneficial, there are certain areas that could use strengthening. It was stated that the fundamental ideas of customer cooperation, continuous improvement, and iterative development were all applied effectively in practice. However, concepts related to simplicity, the independence of self-organizing groups, and the need of in-person communication were thought to be less consistently maintained. This points out some directions for further integrating agile principles and practices into the daily work of the project team.

The results of correlation analysis demonstrated a strong positive relationship between the perceived effectiveness of the agile methodology and the implementation of agile practices. The benefits of agile were reaffirmed by qualitative feedback, which also highlighted the need to overcome implementation obstacles. This highlights the value of an agile strategy that is executed properly and the necessity of overcoming obstacles that have been identified.Stakeholders were generally positive about the agile techniques that were put in place, but they also identified certain areas that needed improvement, like risk management, planning, and documentation. This feedback suggests that in order to guarantee a thorough application of the technique, there is an urgent need to better align stakeholder expectations with the project's agile execution.

To put it simply, the report outlines an agile project that was seen as mainly successful but also full of chances to improve the agile technique and address existing issues. The comprehensive insights obtained provide a useful road map for future agile project improvement. This extended narrative offers a thorough and organized summary of the results, giving a precise picture of the state of agile implementation at the moment and how it affects the project in question. It acts as a roadmap for upcoming enhancements and strategic planning in the context of agile project management.

5.2 Conclusion

The study's conclusions suggest that combining traditional and agile project management techniques could help fintech companies better navigate an increasingly marketized external environment that is marked by competition, consumer choice, and technological advancement. According to the report, agile management requires traditional project management as a prerequisite. This means that the project team and stakeholders' capacities can be enabled through the deployment of an effective and structured (waterfall) resource base (agile). However, there is a risk to product quality and a narrow customer value focus when establishing waterfall strategies as a prerequisite for agility, which makes it more difficult to adapt to changes in the external environment. Finding the ideal balance between waterfall and agile processes is therefore essential, taking into account the unique features of the fintech project environment.

Fine Tech projects must demonstrate a certain amount of balance and dynamic, effective management skills in order to successfully integrate waterfall and agile activities. They must be aware of and combine information from external stakeholders, quickly adjust to changing market conditions by utilizing their current resource bases, cooperate with stakeholders outside of the company, handle conflicts in multi-stakeholder collaborations, and manage both human and material resources flexibly.

This paper argues that, despite the fact that both traditional and agile methods encompass concepts that go beyond software projects alone (see Beck et al. 2001), there are better ways to develop software by prioritizing people and interactions over processes and tools, working software over extensive documentation, customer collaboration over contract negotiation, and adapting to change rather than sticking to a plan. This is based on the agile manifesto and its twelve principles in managing IT projects (Jim Highsmith, 2010). When seen as an enhancement of project performance, can be applied to differentiate between agile and traditional management methodologies.

It is widely acknowledged that agile methodologies are effective; respondents particularly value the iterative process, early client participation, and focus on providing functioning solutions. Nonetheless, it is a pragmatic acknowledgement that agile is not a universally applicable answer. In order to handle a variety of project objectives and obstacles, the organization must retain strategic flexibility by integrating agile with other approaches as necessary. Agile approaches are widely accepted, but there are still major obstacles to

overcome before they can be used in real-world situations. The research emphasizes the challenges of breaking through ingrained habits and change resistance while incorporating agile best practices into current organizational structures. Some respondents showed skepticism and neutrality, which suggests that in order to effectively integrate agile principles into the firm, specific education, training, and cultural transformation are required.

In conclusion, the firm exhibits a significant preference for agile approaches; but, in order to fully realize their potential, it will be necessary to tackle implementation issues, cultivate a supportive culture, and preserve strategic flexibility. The organization may improve efficiency, stakeholder satisfaction, and project success by implementing these ideas and improving its project management practices. The study highlights how crucial it is to regularly assess and modify agile processes in order to guarantee their efficacy. This entails evaluating how agile approaches affect the performance of the entire organization, team dynamics, and project outcomes. It takes ongoing feedback loops from external stakeholders as well as from internal team members to improve agile techniques and achieve long-term project success.

5.3 recommendation

According to the study, the primary reason why projects fail with passive project management approaches is that requirements are never fully grasped. The study also revealed other results that suggested technological issues could be the reason for a project's failure. When a company is undergoing a transformation, these characteristics get amplified. Changing approaches can generate additional problems since it alters the project's workflow and phases, which has an impact on both the technology and the people involved. Even just looking at the case results makes it clear that most study findings point to a human component as being essential to an agile project's success. IT project managers in particular that work in the fintech industry may find this study useful in creating a hybrid waterfall and agile management strategy. When technical advancement and project complexity combine to create an unstable or tumultuous project environment, they could find this research helpful. For financial technology businesses interested in using agile concepts, the following steps are advised:

- Keep an eye on organizational elements, such as resources, training, rewards, and culture. Individual rewards recognize members whose completed activities reflect individual responsibility, while collective awards support groups whose tasks were made interdependent (Shore, 2008). A culture that prioritizes results over bureaucracy and encourages critical thinking over tradition is generally more conducive to agile.
- Be mindful of other people. Team performance is strongly impacted by interactions between team members as well as relationships with other teams, clients, and suppliers (Cao, 2009).
- Be mindful of the entire process. Process includes details on how to adhere to agile-oriented project management requirements or agile-base project management, agile-base configuration, strong communication channels—which are crucial for daily in-person interactions—respecting regular work schedules, and adhering to strong customer commitment and presence.
- Improve the team's technical skills. In the software industry, prior technical knowledge and skill relative to project duration is important (Doran, 2004).
- Keep an eye on both internal and external circumstances to enable ongoing improvements to the business and demonstrate a willingness to reallocate current resources, allowing for quick response to modifications in project requirements.

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Appendix I: Questionnaire Questionnaire for Amole project team St.Mary university Project management program

Dear respondent

This questioner is prepared by a graduate student of St' Marys' University, School of Graduate Studies to identify and assess the outcomes of agile methods applications as a project management approach of software development process in AMOLE at Addis Ababa. It is designed to collect information about your experience with agile methods and practices **related to your role in the company as a project team.** Your response to the items of this questionnaire will be used to analyze the existing agile practices and its result on the project performance improvement and its management process.

I hope you will be able to take some time and carefully complete this questionnaire. You are kindly requested to fill the questionnaire as frank and reasonable as possible. You don't need to mention your name and also you are assured that responses for these questions remain confidential and used for academic purpose only.

Thank you in advance for your cooperation!

Part one: General information questionnaire

Instructions: Make a "√" in the appropriate box.

1. Sex

   Male ☐ Female ☐

2. Age

   18 to 30 years ☐ 31 to 40 years ☐ 41 to 50 years ☐ 51 and above ☐

3. Educational Level

   Diploma ☐ Degree ☐ Master ☐ PhD ☐

4. Work experience

   Less than 5 years ☐ 5-10 years ☐ 11-15 years ☐ above 15 years ☐

5.Have you had any experience with agile methodology or have taken training on Agile at AMOLE or elsewhere? **Yes** ☐ **No**

Part one, *Instruction*

Please complete the following questionnaire with specific regard to the Agile software project management approach in your company. These questions have a 5-point Likert scales ranging from strongly disagree to strongly agree.

Please indicate your response by ticking on the appropriate box among option that best describes your experience on the agile methods with your project endeavor.

1. SD: **Strongly Disagree**
2. D: **Disagree**
3. N: **Neutral**
4. A: **Agree**
5. SA: **Strongly Agree**

Tick on your response □ □

No	1. Please signify your agreement level with the following questions about agile method in your company	**SD** 1	**D** 2	**N** 3	**A** 4	**SA** 5
1.	Less formalization of the IT project management process is necessary to enable it to adapt to changing needs faster.					
2.	Agile methodologies play a significant role in our project.					
3.	Agile ensures that the final product is polished by accommodating needs changes at any point in the development process.					
4.	Agile best practices are implemented in our organization.					
5.	Within the agile methodology, a project's outcome may be impacted by the technical proficiency and expertise of involved clients.					
6.	The efficacy of Agile is determined by the previous corporate culture.					
7.	In our project, the agile methodology enhances self-organizing teamwork and creative discipline.					
8.	It is crucial that IT projects produce the appropriate output on schedule.					
9.	Project risk is decreased by the agile method as opposed to the conventional traditional strategy.					
10.	I was able to control the problems of implementing Agile methodologies in the context of our project.					
11.	An agile strategy enhances team motivation and morale.					
12.	The agile methodology can assist a business in accomplishing its project goal.					

Part Two, Assessing effectiveness of agile approach in the company

No	2. Please signify your agreement level with the following questions about agile approach effectiveness in your company	**SD** 1	**D** 2	**N** 3	**A** 4	**SA** 5
1.	All team members is aware of and agrees with the Agile philosophy, principles, and practices.					
2.	Using agile principles at work can be difficult.					
3.	The business needs to implement strategies other than agile.					
4.	Project teams are interested in collaborating with agile approaches.					
5.	Agile project management techniques need to be regarded as the optimal working methodology.					
6.	Project teams occasionally fail to recognize the advantages of Agile in their daily operations.					
7.	Project management procedures are enhanced by agile approaches.					
8.	The ability to handle shifting priorities is improved by using agile methodologies.					
9.	People are motivated by agile approaches for the duration of the project.					
10.	Agile approaches work well for in-person project team collaboration.					
11.	Your project case demonstrates a high level of customer dedication and teamwork.					
12.	The implementation of Agile Philosophy and Practices on this project is not restricted by any obligatory standards or other requirements.					

Part three, agile principles for software project management approach.

No	3. Please signify your agreement level with the following questions about agile principles In your project.	SD	D	N	A	SA
		1	2	3	4	5
1.	Ensuring customer satisfaction through timely delivery of meaningful deliverables is the top goal.					
2.	Even at this late stage of development, the organization is prepared to accept evolving requirements.					
3.	The business typically meets deadlines for working deliverables.					
4.	Throughout the project, there is close collaboration between the project team and the consumers.					
5.	The organization trusts the team to complete the task at hand and offers a supportive and encouraging environment.					
6.	The project team believes that having face-to-face conversations is the most effective and efficient way for team members to share knowledge.					
7.	The main indicator of our project's development is the working product.					
8.	Agile approaches encourage long-term project management practices in order to stay up to date with the market.					
9.	To improve agility, technological quality is continuously prioritized.					
10.	Simplifying the project increases the quantity of work completed.					
11.	Teams that can organize themselves produce the best artifacts.					
12.	The project team considers ways to improve its effectiveness on a regular basis and modifies its actions accordingly.					

Part 4, The association between the agile project management practices and the outcome of the agile approach

No	Signify your agreement level with the following questions	SD 1	D 2	N 3	A 4	SA 5
1	Our team consistently engages in continuous planning to adapt to new information and changing requirements.					
2	Continuous improvement practices are a core part of our development process.					
3	Our team accommodates changes even late in the development process without significant disruption.					
4	Feedback loops are regularly incorporated to ensure continuous development.					
5	Incremental development allows our team to deliver usable product features early and frequently.					
6	Parallel development activities are effectively coordinated to facilitate early delivery.					
7	Frequent releases of our product have improved the overall quality and user satisfaction.					
8	The ability to deliver early has positively impacted our project timelines and goals.					
9	Our project team is small and cohesive, which enhances our productivity and communication.					
10	The team members are highly skilled and experienced, contributing to the success of the project.					
11	There is a strong level of collaboration between the team and customers throughout the project.					
12	Teamwork and collaboration are essential elements of our agile practice.					
13	The agile approach has significantly improved our project's overall success rate.					
14	The flexibility of the agile approach has allowed us to better meet customer needs.					
15	The agile methodology has enhanced our team's efficiency and productivity.					
16	Overall, the outcomes of using agile practices have been positive for our projects.					

Appendix II : Questionnaire Questionnaire for project stakeholders St.Mary university Project management program

Dear respondent

This questioner is prepared by a graduate student of St' Marys' University, School of Graduate Studies to identify and assess the outcomes of agile methods applications as a project management approach of software development process in AMOLE at Addis Ababa. It is designed to collect information about your experience with agile methods and practices related to your role in the company as a project stakeholder representative. Your response to the items of this questionnaire will be used to analyze the existing agile practices and its result on the project performance improvement and its management process.

I hope you will be able to take some time and carefully complete this questionnaire. You are kindly requested to fill the questionnaire as frank and reasonable as possible. You don't need to mention your name and also you are assured that responses for these questions remain confidential and used for academic purpose only.

Thank you in advance for your cooperation!

Part one: General information questionnaire

Instructions: Make a "√" in the appropriate box.

5. Sex

Male ☐ Female ☐

6. Age

18 to 30 years ☐ 31 to 40 years ☐ 41 to 50 years ☐ 51 and above ☐

7. Educational Level

Diploma ☐ Degree ☐ Master ☐ PhD ☐

8. Work experience

Less than 5 years ☐ 5-10 years ☐ 11-15 years ☐ above 15 years ☐

5.Have you had any experience with agile methodology or have taken training on Agile at AMOLE or elsewhe ☐ **Yes** **No** ☐

Closed and open-ended questions for the project stakeholders

This section of questionnaire is designed to collect information form the five key AMOLE stakeholder namely: Nyala Insurance, NILE Insurance, ESHI Insurance, Key housing and Gojo bridge housing. The representatives of these organizations who are working closely with AMOLE whose experiences with agile practices are important for a conclusion and recommendation of the study. After you read the following questions carefully; then indicate your point of view in the scale provided for each question that best describe your response. Tick the check box□

Indicate the organization that you represent?

Nyala INS. ☐

Nile INS. ☐

ESHI. ☐

Key H. ☐

Gojo B. H. ☐

1. SD: **Strongly Disagree** 3. N: **Neutral** 5. SA: **Strongly Agree**
2. D: **Disagree** 4. A: **Agree**

Tick on your response □

□

No	Please signify your agreement level with the following questions about agile practices	**SD**	**D**	**N**	**A**	**SA**
		1	2	3	4	5
1.	Amole agile approaches have positively impacted my organization's overall performance.					
2.	Agile approaches have influenced the cost of project development with Amole.					
3.	My business strategy aligns well with my expectations regarding Amole Agile methods.					

Open Ended Questions

1.What might occur if AMOLE decided not to use agile for the project?

2. Do your representatives' interactions with the AMOLE project team exhibit any impediments behaviors that are consistent with the team's organizational culture?

3.What were the biggest challenges of the project from your point of view?

Please write any further comments overleaf