



**UNIVERSITY OF NAIROBI**

**SCHOOL OF COMPUTING AND INFORMATICS**

**ADOPTION OF AGILE METHODOLOGY IN ICT SOFTWARE PROJECTS IN  
KENYAN INSURANCE COMPANIES**

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**P54/7505/2017**

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**A Project Submitted in Partial Fulfillment of the Requirements for the Degree of Master of  
Science in Information Technology Management, School of Computing and Informatics,  
University of Nairobi.**

**July 2021**


**DECLARATION**

This research is my original work and has not been presented before any other examination body or any research institution or University.

Signature 

Date...**20/08/2021**.....

This research has been submitted for examination with my approval as University supervisor.

Signature: 

Date: *20<sup>th</sup> August 2021*

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## **ACKNOWLEDGEMENT**

My deepest gratitude goes to my supervisors Prof. Daniel Orwa & Mr. Christopher A. Moturi for their guidance throughout the project cycle. Their attention to detail and zeal to teach and instruct is admirable and worth emulating.

I thank my dear wife, Diana, for the support in reviewing the document and giving feedback. Ethan and Joshua deserve a mention. Their support cannot go unmentioned.

There are many others that have contributed to the research significantly; the respondents in various insurance companies in Kenya, fellow researchers in the cohort – just to mention a few. For them and those I have not mentioned, I am grateful for your input.

## **ABSTRACT**

### *Background*

Since the early 2000s, numerous businesses have used agile techniques in order to accelerate their return on investment and enhance their capacity to adapt to changing market conditions.

### *Purpose*

The purpose of this research was to strengthen Agile Methodology in IT projects by proposing the methodology that can be adopted by insurance companies in Kenya in its projects.

### *Method*

Using descriptive research, data was collected through interviews on key informants and questionnaires to randomly select Kenya Insurance Companies' IT and back-office staff. The target population for this study was Insurance companies in Kenya that have been in existence for a period of not less than five years and operate in Nairobi County.

### *Findings*

The study shows that compared to other agile methodologies, scrum is the most preferred by Kenya Insurance companies due to the benefits derived from its adoption.

*Limitation*

The study was limited to Kenya Insurance companies operating within Nairobi County and have been in existence for more than five years. Thus, respondents from other insurance companies were omitted.

*Value of Research*

Understanding the adoption level of agile methodology is a step closer in the implementation of effective agile methodology in service delivery. Identifying possible key hurdles in the adoption of agile methodology in insurance industry will be key in identifying a suitable approach and methodology for the insurance industry in Kenya.

*Conclusion*

The research proposes that scrum agile methodology helps insurance companies in Kenya realize more benefits and return on investment compared to traditional software development approaches. In some instances, various agile methodologies can be employed to realize value.

**Key words:** Agile Methodology, Scaled Agile Framework (SAFe), Insurance Companies, organizational-environmental (TOE) model.

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## **ABBREVIATIONS**

**APM:** Agile Project Management

**ICT:** Information Communication Technology

**IT:** Information Technology

**IS:** Information Systems

**ROI:** Return on Investment

**SAFe:** Scaled Agile Framework

**IRA:** Insurance Regulatory Authority

## **CHAPTER ONE: INTRODUCTION**

### **1.0 Introduction**

The capability to complete activities efficiently and on time is a crucial component of a business's ability to provide superior services to its clients. Along with providing exceptional service to their stakeholders, such as receivables, payables, and payroll, businesses must continually improve their internal processes, such as inventory and revenue stream management, contract management, and internal financial management. Information management solutions that are both efficient and cost effective are critical for every business. A more agile strategy has a significant impact on information technology software management. This study will be focusing on adopted agile methodologies in software development by insurance companies in Kenya. It will investigate various aspects such as impacts and setbacks in adopting agile methodology in software development project in Kenya. In addition, agile methodology adoption is a continuous process that requires continuous improvement, making the experienced setbacks inseparable in its adoption.

### **1.1 Background of the study**

Since its inception, Agile software development methodology has transformed software development projects. Previous software development project methodologies followed processes that called for elaborate planning. They were stiff and uncompromising due to their unique nature. The information is stored and sent amongst specialists using industry-standard software development techniques. In many situations, feedback cycles are excessively long or non-existent. Rather than focusing exclusively on front-end requirements definition, agile principles emphasize the creation of a product that customers can simply use. Large hierarchies and functional silos are

being phased out in favor of cross-functional teams empowered to make agile development decisions. Regular customer input also emphasizes a rapid iteration process. The article's central subject is scalability. Those that do role analysis will notice the agile approach's success. Additionally, the agile deployment of our own company is emphasized. Agile software development was founded on the principle of short iterations and frequent releases.

Changing and diverse consumer preferences are resulting in complex software systems (Yaohong & Jingtao, 2014). Simultaneously, the market is quite competitive. Therefore, software development teams must develop solutions meeting all user requirements at an agreed upon costs and predetermined time. The traditional software development techniques were cumbersome, paying more attention to standardization and the industry. This resulted in high costs and prolonged development cycles. Agile methodologies have grown significantly over the last several years and are gaining traction in the optimization of software projects. Agile software development strategies are more adaptable than traditional ones. It is a self-organizing method that may be used to accomplish a specific business goal. Agile techniques, for example, are oriented on the development of incremental outcomes or solutions on a consistent and timely basis. People are more satisfied with their purchases when they use agile approaches.

The term "Agile Development" applies to a variety of iterative and incremental software development approaches. Numerous agile software development techniques are well-known, including the Agile Unified Process, Crystal Approaches, Method for Dynamic Systems Development, Lean, Scrum-ban, and Software Development Rhythms.

Scrum reduces complexity through management and control technologies, allowing developers to focus on developing software that meets business objectives. They place a premium on working in a fast-paced, connected atmosphere. As with previous approaches, "agile" project development does not require global technology standards (Doronina, 2017). Scrum is used to manage IS (information systems) development processes. Scrum focuses on the short or rapid delivery of development processes. A software support team employs agile methodologies as a model or approach for managing and maintaining software development (Doronina, 2015). Scrum and Agile project management methodologies divide projects into sprints. For (Elallaoui, 2018), each iteration consists of five steps: startup, analysis, design, performance, and testing. A user story is a description of how a program or system operates from the perspective of a customer or user. The UML modeling language, which consists of many diagrams, is used to conduct object-oriented system analysis and design.

Continuous involvement, regular and small releases, continuous improvement, flexible planning, dynamism, and simplicity are the primary ideas of agile methods (Abrahamsson, 2016). This article discusses how insurance firms in Kenya are implementing agile methodologies, APM techniques, and concepts.

## 1.2 Problem statement.

Numerous organizations in a variety of developing nations are becoming increasingly reliant on digital technology to conduct their daily operations. Numerous organizations, ranging from financial institutions and small businesses to governments and not-for-profit organizations, are participating. Financial service businesses demand dependable software solutions that enable them to not only conduct their core business but also to deliver superior services to their stakeholders in order to operate successfully.

### **1.3 Objectives of the study**

#### **1.3.1 key Objective of the study**

The primary goal of this study is to determine how Kenyan insurance firms are implementing agile methodologies in their ICT software development projects.

#### **1.3.2 Specific Goals**

They include:

- i. Examine how Kenyan insurance firms employ agile approaches.
- ii. Determine the success factors impacting Kenyan insurance firms' adoption of agile approach.
- iii. To ascertain the barriers to the adoption of an agile strategy by Kenyan insurance firms,.

### **1.4 Research Questions**

The following research questions were answered by the study

- i. How have Kenyan insurance businesses used agile practices into their IT initiatives?
- ii. What success factors influence Kenyan insurance firms' adoption of agile approaches?
- iii. What are the barriers to Kenyan insurance firms adopting an agile strategy?

### **1.5 Significance of the Study**

The findings from this study will be important for Insurance companies in Kenya. Understanding the adoption level of agile methodology is a step closer in the implementation of effective agile software in service delivery. Identifying possible key hurdles in the adoption of agile in insurance industry will be key in identifying a suitable approach and methodology for the insurance industry based on the organization dynamics, products and services offered, existing regulations and the nature of clientele.

### **1.6 The Study Scope**

This study concentrated on Kenyan insurance companies that are using agile methodology in their software development.

### **1.7 Limitations of the Study**

The study is confined within the adoption of agile methodology by Insurance companies in Kenya and experienced setbacks. The methodology adopted might only be effective some Insurance companies and not some Insurance companies in Kenya.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.0 Introduction**

Software development is a process entailing creating software applications to help address clients' needs. The lifecycle in software development entails tracking and managing necessary steps, from conception to release to production. Software development methodologies range from waterfall technique, which is the oldest, to modern techniques such as scrum agile methodology.



## **2.1 Agile methodology**

Today's software development environment continually alters requirements to keep up with changing demand. Software development, particularly for small businesses, will always be a challenge. Even in the 1990s, a number of software engineers discovered that traditional methods were incapable of meeting deadlines or ensuring customer satisfaction. As a result, the Agile Methodology was born. The "Agile Manifesto" published in 2002 was the first publication to outline agile concepts. Scrum has surpassed Kanban as the most popular agile methodology in recent years, and it's simple to see why. Scrum is popular with consumers due of the added value it provides.

According to Agile Software Development, requirements and solutions are developed iteratively and incrementally via cooperation among self-organizing, cross-functional teams. Agile methodologies address a variety of issues across the software development life cycle. Scrum, for example, is a strategy for managing projects using project management software. According to Agile Software Development, software development is iterative. The product owner, in conjunction with stakeholders, divides user stories into epics. Following that, they are categorized and split into smaller, more specialized jobs. All high-priority jobs are backlogged. Agility is simply a collection of waterfall-style methods for developing and testing software incrementally.

Since the early 2003, a small number of businesses have used agile techniques to accelerate their return on investments and improve their capacity to adapt to market changes. Finally, flexibility allows for rapid course correction in response to changing environmental conditions, user requirements, and deadlines. Software development takes precedence over documentation when it comes to agile approaches. XP and scrum are the two most prevalent agile techniques used in the majority of established businesses.

## **2.2 APM in Developing Countries**

Hoda et al. (2015) notes that agile methodology has been key in promoting continuous consumer involvement during the software development process. Dingsøy et al. (2019) observes that, other than software engineering, APM has attracted immense attention in project management and information systems. APM is often linked with increased productivity levels. According to Bass & Haxby (2019), it is possible to tailor agile methods to fit large scale, discipline, and regulated environments. Many developing countries have implemented agile techniques in running their daily operations. Many practitioners are aware of the many benefits arising from agile adoption (Regassa et al., 2017). Existing gaps between end-users and software developers has been a huge hindrance in the entire process. This arises due to low IT literacy levels and communication patterns.

A study conducted in Egypt by Mohallel & Bass (2019) reveals positive impacts of adopting agile methodology for consumer satisfaction. There were challenges observed which among them is lacking an efficient sprint plan. Also, a study by Tarhini et al. (2018) on software development in Lebanon faced challenges such as poor ICT structures and inadequate support from the administration. Some of the barriers to effective implementation of agile methods in administrative units are poor ICT infrastructure & inadequate government plans.

### **2.3 APM in South Africa**

According to Vanker C (2015), organizations in South Africa are using a combination of methods to develop software. This is because of the inadequate experience in using agile methods for software development. South Africa is a late adopter of agile because of organizational culture, lack of skilled personnel, general resistance to change and lack of management support. These factors have greatly contributed to the slow adoption of agile practices in South African organizations. According to the research, the projects that were undertaken using agile approach were more successful compared to the ones that were undertaken using the traditional software development methodologies.

### **2.4 Scrum Adoption Obstacles in Financial Institutions**

While it is true that adopting agile techniques in the workplace has a number of benefits, there are hurdles to adoption in financial institutions. As a result of this research, four separate kinds of concerns were identified and resolved. Staffing issues may arise as a result of a lack of experience and dedication, the geographical location of teams and stakeholders, stakeholder involvement, availability to training courses, and customer requirements evaluation. The second group of challenges is organizational and management-related, as a result of legal and cultural constraints. A third group includes processes that address a broad range of issues, including team practice changes, functional and non-functional requirement identification, team reliance, project reporting and tracking, quality control, risk management, and scalability, to name a few. Additionally, a fourth set of tools is provided to handle issues such as a project's technical complexity and integration problems.



## **Dimension of Challenges**

### **2.3.1 Organization**

The transition to an agile scrum approach has an impact on the whole organizational structure (Meso 2018). Resistance to change may be evident in all of these areas, as the company's structure is different and employees are accustomed to adopting strict work habits over an extended period of time. Each employee in the organization works more closely using Scrum agile methodologies. The exchange of knowledge is a critical component of this strategy's effectiveness. On the other hand, lack of communication and collaboration are frequently cited as grounds for resistance. Depending on the situation, departmental divisions or even ad hoc collaborations may be formed. Scrum agile techniques must overcome these obstacles if they are to succeed (Jain 2016).

Tanner (2018) discuss how culture may be an impediment to scrum agile adoption. When dealing with traditional development over an extended period of time, cultural barriers may arise. On the other hand, culture may be a hindrance as well as an asset. Changes to the workplace culture that promote shared ownership can be beneficial to software teams.

It is very uncommon for legislation to act as a barrier, particularly when large initiatives involving many firms and collaboration with government institutions are involved. The common standards and practices of these groups may be quite different. In many cases, the project kick-off meeting must follow a rigid schedule of activities that contradicts the principles of agile development. Finally, audit methods are generally designed to operate within the confines of standard software development methodologies.

### **2.3.2 Persons**

Agile Scrum methods are widely misunderstood (Schatz, 201

6). Due to a lack of accessible training and time constraints, training programs may assist ease this issue. Two critical characteristics are experience and devotion. However, because scrum agile methodologies are unique, businesses often struggle to adopt a set of principles based on prior project experiences. Rather than that, individuals that use scrum agile methodologies should be more adaptable to a variety of tasks. When agile techniques are used, two types of responsibilities are created: shared accountability for the end product and individual accountability for the work of each team member.

In today's climate, self-organizing teams are used to maximize the effectiveness of each individual. Because the team is accountable, rather than being directed by external individuals, this technique enables team members to choose the most efficient way to do their work from inside the group. One of the most often voiced issues is the difficulty of working with large groups of geographically dispersed persons. This component changes agile methodologies to account for team members' and stakeholders' remote locations. A lack of team cohesiveness was highlighted as a difficulty. Informally, Abdelshafi is referred to as Abdelshafi (2016).

According to Scarpino and Chicone (2016), engaging stakeholders throughout the process and accurately determining user needs are ongoing challenges for agile methods' success. User stories are prioritized for execution during iterations to ensure that intended objectives are met and that customers are satisfied.

### **2.3.3 Procedure**

According to Sarpiri, the scrum agile model's requirement identification process is a continual learning process (2018). Generally, missing requirements are an issue only when stakeholders are involved infrequently or not at all. The requirement for a consumer to resolve disputes is becoming prevalent. Additionally, user interaction should be used to ascertain not just functional requirements but also non-functional characteristics of the project, such as portability, extensibility, security, and usability.

According to West, agile approaches place a higher premium on functional software than on documentation and other forms of documentation. Although this concept is commonly misinterpreted, it is critical to consider it. Documentation is very critical in agile workplaces. Collaborative technology enables agile teams to create and maintain high-quality documentation. Other scrum agile authors recommend establishing and maintaining a document management system. When many teams collaborate on the same release, complex projects frequently have cross-team dependencies. When many teams are involved, issues with shared features and code may arise.

Estimating the work required to offer a given feature is one of the most controversial subjects in writing. However, team commitment to the discovered value is by far the most frequent

approach. Another source of contention is metrics. The most often used metrics are iteration speed, iteration errors, and project duration (West, 2017).

End-to-end quality is critical to a successful software development approach. Agile development is well-suited for projects with tight deadlines since it ensures quality. Refactoring, reviews and inspections, as well as standards and norms, may all be utilized as agile quality techniques. Risk management is not a commonly used method in agile development. As a result, research and development continue to have plenty of room. These problems must be identified, prioritized, and managed/controlled (Taleb, 2019).

#### **2.3.4 Tools**

According to Conboy et al., the complexity of the technical project is critical for agile project success (2018). Due to the complexity and interconnectedness of the system, developing large-scale applications is very challenging. A complicated technology project must employ agile techniques and management approaches to manage risks and obstacles throughout its different phases.

System integration presents a variety of challenges, particularly in larger, more sophisticated projects. Numerous these projects need us to combine components from a variety of sources. Another issue is the integration of modules with disparate technology. Complex projects may necessitate the involvement of several product owners (Conboy et al, 2018).

In an agile scrum environment, where requirement identification is a continuous process throughout the project's development, some boundaries and limits must be created. Numerous repetitions are required before an acceptance criterion can be established. Numerous more approaches for project appraisal have emerged in business. Continuous integration has risen in

popularity because it enables organizations to provide new features and products on a consistent basis (2019).

## **2.4 Theoretical Framework**

In this section we will discuss the theoretical models and illustrate the key constructs of Scrum agile adoption that each model addresses. This study reviews two theories that have been developed and used in earlier research to explain technology usage and behavior. These theories are:

1. Unified Theory of Technology Acceptance and Use
2. Technology-Organization-Environment (TOE) Theory

### **2.4.1 Technology-Organization-Environment Model**

Fleisher and Tornatzky proposed the TOE hypothesis in 1990 to explain how companies absorb technological innovation (Angeles, 2013). The technological advancement of an invention results in the dissemination and acceptance of the invention by the target market; this is the process of technical innovation (Garcia, 2016). According to TOE Theory, technical, organizational, and environmental elements all have an effect on a firm's capacity to embrace new technologies.

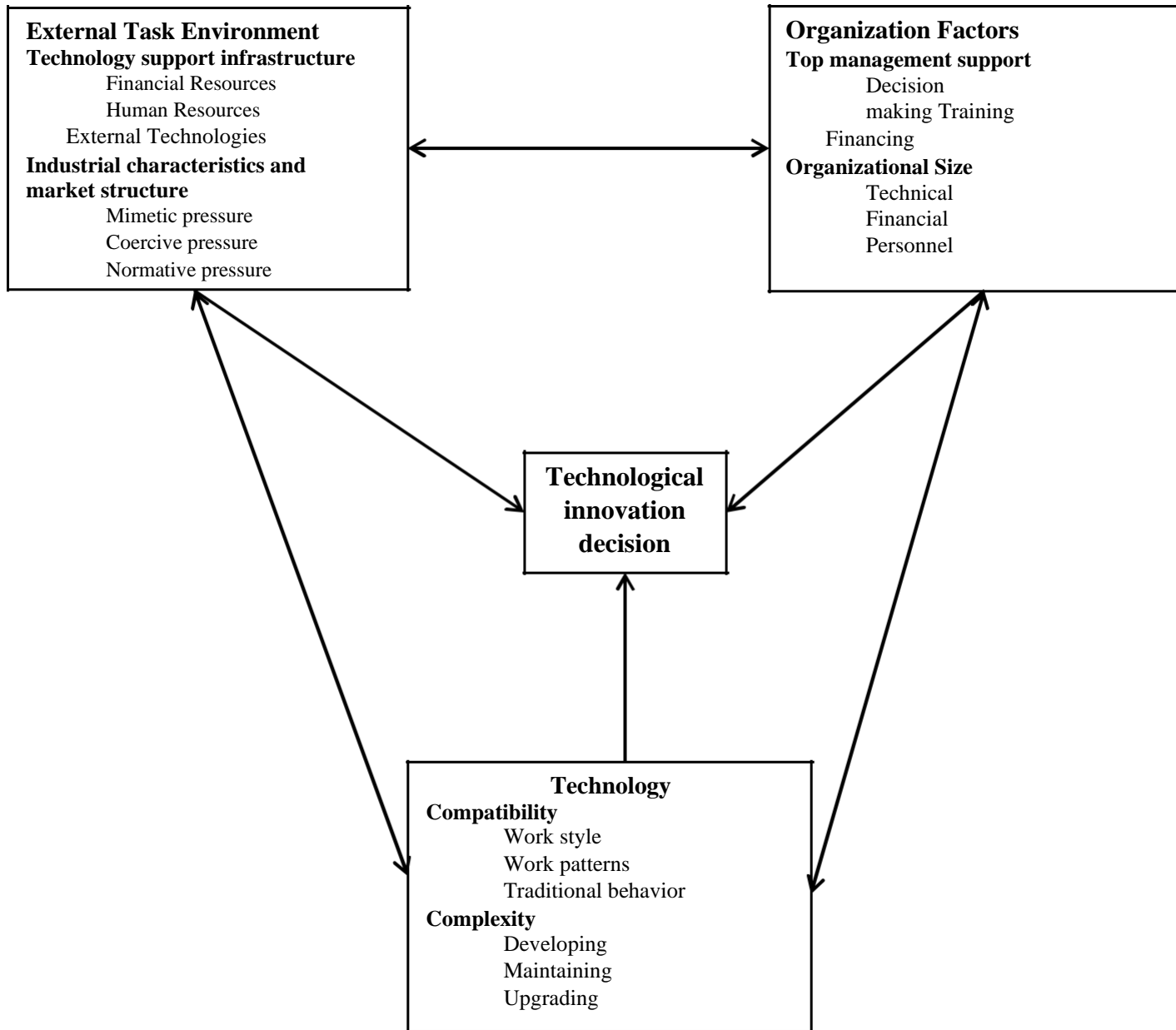
The company's existing policies, procedures, equipment, and technology are all compatible and demanding in this respect (Oliveira & Martins, 2016). Existing technologies and their compatibility with existing environmental technology have an effect on how technological advancements are accepted (Borgman et al., 2014). A "knowledge tool" and a "combination of social, behavioral, and physical components" were identified, since each approach necessitates



interaction between people and technology in order to grasp their usage, use, and surrounds (Tornatzk,1993).

Corporate size and managerial support may either facilitate or obstruct innovation adoption (Fitzgerald, 2015). [Since 2012]. Additionally, the term refers to financial and human resources (David et al., 2015). Connections inside and between businesses, internal decision-making and communication processes, external engagement with the outside world, and the quality of human resource organization may all have an effect on technological advancement (Angeles, 2014).

A firm advance technologically in response to its present business environment. The business environment of a firm is the firm itself, including the significant factors in the business sector (Awa et al, 2012). For example, social and cultural issues, competitive intensity, a regulatory environment, and technology-enhancing infrastructure will all impact a company's willingness to make significant technological advancements in its operations.



**Figure 2. 1: Technology Organization Environment Framework**

**Source (Oliveira and Martins 2011)**

Their research contributed to establishing the utility of TOE in analyzing scrum agile adoption at the corporate level. Recognizing the unique characteristics of each business, they propose a more in-depth examination of the drivers, facilitators, and inhibitors of information system adoption (Ghobakhloo et al.). Their findings confirm the importance of using TOE as a framework for comprehending the constraints that occur when decision makers decide whether or not to embrace a certain information technology.

#### **2.4.2 Unified Theory of Technology Acceptance and Use**

The Unified Theory of Acceptability and Use of Technology (UTAUT) fosters study on the acceptability of specific technologies by combining the several theoretical perspectives often used in enterprise-level information technology research (Venkatesh, 2004). It was expected that performance expectations, effort expectations, social influence, and facilities would all play significant roles as primary drivers of user acceptability and use. Anxiety and self-efficacy were expected to be indirect determinants of intent. Four moderators account for dynamic elements such as the business environment, user experience, and demographic data (gender, age, experience, and voluntariness of usage). This permits a fair comparison of the various models by assessing the effect of these variables on intent.

Individual technological responsiveness, intention to utilize information technology, and actual use of information technology are the three essential foundations of the UTAUT paradigm. The anticipated performance metric refers to the extent to which a certain technology enables consumers to accomplish specific tasks. When it comes to the ease with which clients can utilize technology, this is referred to as effort expectation. The term "social influence" refers to the extent to which purchasers believe that other key players, such as family and friends, agree that a particular technology should be allowed to be used. According to its creators, the UTAUT model

is a tool that managers may use to choose whether or not to deploy new technology. It also anticipates and explains user behavior related to information technology use.

## **2.5. Agile Methods or APM**

As a framework and team management style, agile emphasizes progress toward predefined work objectives, even in the face of unpredictability. XP, Scrum, Crystal, and DSDM are all examples of agile software development methodologies, which may be characterized as adaptable programming approaches that evolve to increase the likelihood of project success. Many agile methods minimize the risks anticipated during project execution through the development of iterations that will last anywhere between one week to four weeks. Every iteration is treated like a miniature project leading to the realization of the final project. It includes necessary task for the implementation of new functionalities namely, planning, analyzing requirements, designing, code writing, testing & documentation. Agile programming projects release new software after every iteration. Between iterations, development teams reevaluate their priorities. According to Scrum Alliance (2016), agile methods have recently gained popularity, especially in the software industry. Ciric et al. (2018) note that there has been progressive use of APMs in other domains.

From the late 1990s, many teams adopted APMs with an aim of improving programming procedures by making them incremental and continuous through the reliance of essential agile principles on modularity, group and personal autonomy, self-organized collaborations and adaptability. The Manifesto reacted to rigidity and weakness of plan-reliance software production technique like the waterfall technique which was unresponsive to changes. The waterfall methodology had limitations which risked the general success of a project with regards to goal fulfillment. According to Oyong & Ekong (2019), some of the limitations noted include early

complete planning in initial stages in the waterfall processes led to failures for the large, complex projects. Delayed project feedback until the last project states resulting in more corrective works reported when close to project completion.

APM emphasizes teamwork through the focusing on social aspects or principles in software development, cross-functional teams, and channeling creation between different participants (Hoda et al., 2015). The key attributes of APM is collective responsibility and ownership.

According to Conforto et al. (2014), APM entails simple processes and tools in communication, frequent application of project plans, monitoring & updating activities, iterative planning, and utilization of project vision concepts and development of self-managed team activities.

There is a growing curve in the utilization of APM which is mainly attributed to its potential in the optimization of operative teamwork capacity in the implementation of short cycles and its positive impact on team dynamics. For a complex multidisciplinary environment, chances for a successful project lies in progress sharing and task visualization. According to Rigby et al. (2016), APM utilization has already expanded beyond software development in different organizations. Some of the studies on APM use in different organizational contexts include the banks project by Niclasen & Stoklund (2016) and product development (Lehnen et al., 2016). Also, Pope-Ruark (2017) talks of applying agile methods in faculty operations. According to K€upper (2016), AMP is responsible for responsive and complex organizational culture away from the world of software development.

### **2.5.1 The Scrum Framework**

The majority of people are familiar with this approach and notion (Lei, 2018). Scrum allows for the division of a project into tiny tasks that can be completed within a specified sprint

or duration, the tracking of project progress, and the scheduling of regular meetings for the production of incremental deliverables. Six essential features of Nonaka and Takeuchi's technique are as follows: self-organizing teams; stability; multiple learning; knowledge transmission within the company; subtle control; and overlapping stages of project development. Overlap fosters collaboration and responsibility sharing by encouraging flexibility and speed.

According to Rigby (2016), a scrum structure is based on the collective intelligence of the team, which necessitates increased motivation and teamwork, clarity in individual duties to minimize conflicts, and member engagement in the scrum process. He is a trained expert or colleague who has been hired by a business to act as a mediator in a project. As a master, you assume tasks that have previously been assigned to team leaders or project managers in any organization-managed project. One of the scrum masters' duties is to remove obstacles to the adoption of scrum techniques and concepts.

According to Abrahamsson et al. (2017), scrum methodology often entails subjecting every task to a development sprint lasting between fourteen to twenty days. A sprint is an iterative cycle where a particular project is enhanced or developed to produce new increments, usually initiated after a planning meeting and they must be complete within the given timeframe. Friess (2018) notes that, the team will have short meeting every day for communication and tracking progress, and if need be, resolves issues raised. After a sprint ends, a retrospective or review meeting is conducting where the developments on a project are examined.

Scrum methodology is directly linked to the APM framework in the release of small and regular viable products, rather than releasing the final, fully complete and evaluated output after a long duration. A Kanban board is used in tracking the practicality of scrum and its implementation each

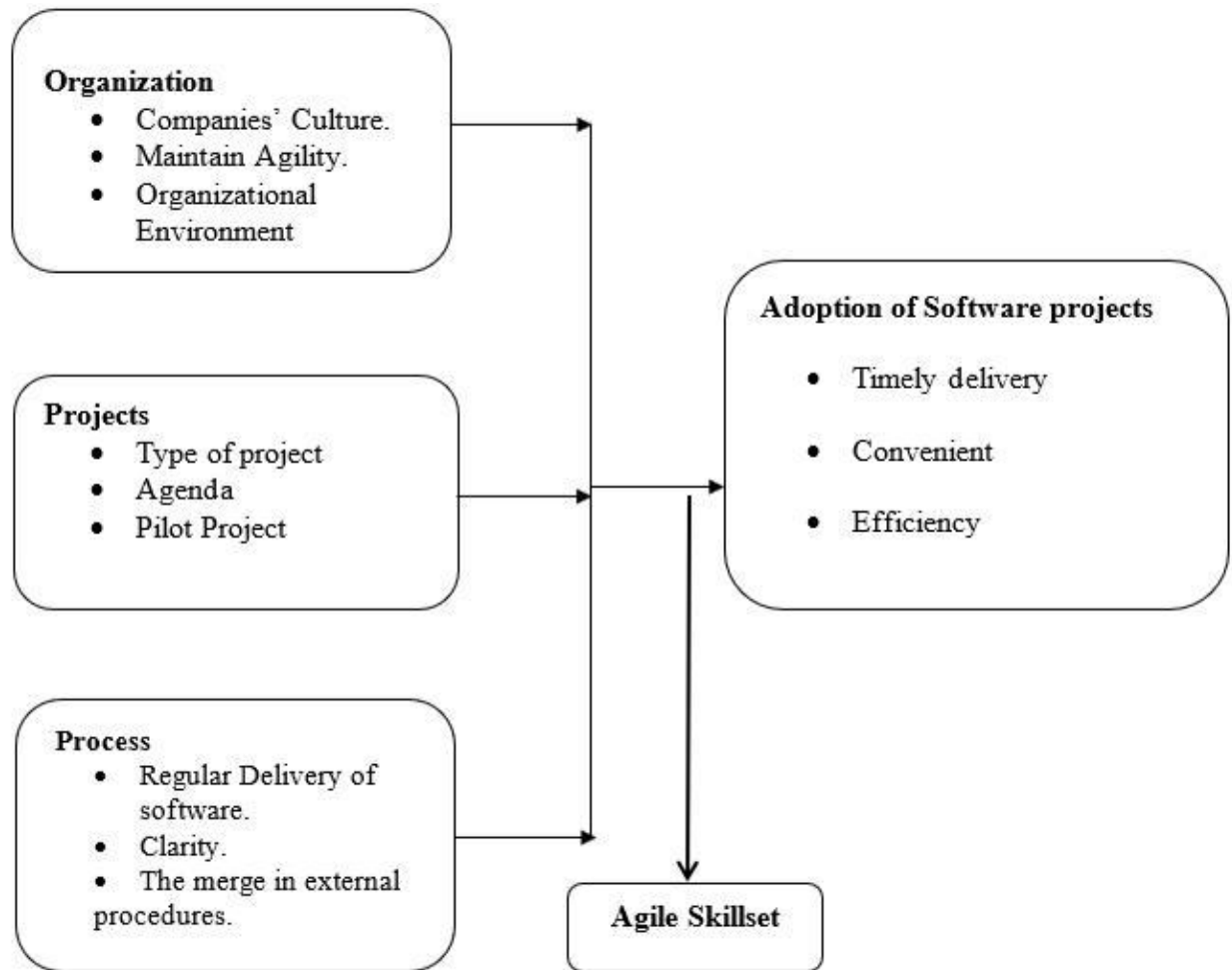
day. With a Kanban board, a project is broken down to various tasks, with post notes used to display descriptions on shared boards having separate columns reflecting progress. This way, workflow is visible to the team members. Kanban boards infuse agile development processes with very high visibility that provides a way of displaying work assignments in a team, highlighting bottlenecks, optimizing efforts, and communicating priorities. The essential aspect in dynamism and shared visibility in teamwork coordination is a paradigm focused on transparent and doable tasks as the key pillar in adopting scrum practices in organizational structures and collaborative processes.

## **2.6 Conceptual Framework**

The conceptual framework below will serve as a guide for the study, taking into account the research objectives and pertinent theoretical literature..

## Independent Variables

## Dependent Variables





## **CHAPTER THREE:**

### **RESEARCH METHODOLOGY**

#### **3.0 Introduction**

This section discusses the sample size, collection of data, study design , target population and sampling techniques and research instruments..

#### **3.1 Research Design**

This research adopted a design known as descriptive research. How valid study findings are, highly depends on the research design a study employ. A design is bringing to life or inventing (Vaishnavi et al., 2014). It was attempting to unravel the adoption of agile methodology in Insurance companies in Kenya using interviews on key informants and questionnaires to randomly select Kenya Insurance Companies' back-office staff. The qualitative data obtained through this design were analyzed appropriately. This design allows for qualitative data analysis.

#### **3.2 Target Population**

Insurance companies in Kenya that have been in existence for a period of not less than five years and operate in Nairobi County were the target population for the study. The respondents targeted comprised the software development IT staff at Insurance companies in Kenya since they are more aware about the adopted methodology and how operations have been since its adoption. The total population for the study was 410 members of staff.

#### **3.3 Sample Size and Sampling Techniques**

If the sample is carefully picked and has more than 30 components, for example, a sample of 10 to 30 percent is enough, says Mugenda & Mugenda (2009) The sample size of the study was estimated with the formula:

A stratified random selection was taken to choose from the aforementioned 410 potential people a sample of 30 percent of the population. One hundred and 23 persons were selected in random with a stratified random sample, 30% of the target population being in each stratum. The sample size for this research is obtained using the formula given by (Cooper et al. 2014), as shown below. Where:

$n$  is the desired sample size (if target population is greater than 10,000)

$Z$  is the degree of confidence chosen at 95% confidence level

$P$  is the proportion in the target population estimated to have characteristics being measured

50% is chosen as recommended by Fisher et al (2013).

$q$  is the proportion in the target population estimated having no characteristics being measured

$=0.3(1-p)$

$L$  is the level of statistical significance set at 5%

$$N1 = \frac{n}{1+(n/N)} = \frac{1.96^2 \times 0.3 \times 0.5}{(0.05)^2} = 123$$

$N1$  is a sample size when target population is less than 10,000

$$N1 = \frac{n}{1+(n/N)} = \frac{1.96^2 \times 0.3 \times 0.5}{(0.05)^2} = 123$$

N1 is a sample size when target population is less than 10,000

The sample size was 123.

To get an accurate and precise generalization of the study population, the sample should be demonstrative of the entire population. The study comprised of selected IT staff from Insurance companies in Kenya selected through sampling.

### **3.5 Data collection**

#### **3.5.1 Instrument of the Research**

The questionnaire was the major data collection instrument used by the researchers. Questionnaires are considered as a cost-effective alternative to verbal or telephone surveys since they contain pre-determined responses that ease data gathering. Two components comprised the survey. Following a brief introduction to the participants, the second segment focused on the research factors. "According to Sekaran, a questionnaire may be used in descriptive and explanatory research (2011) Because descriptive research is descriptive, it assists in identifying and characterizing variation in a wide variety of contexts through the use of attitudes, opinions, and organizational practices surveys.

#### **3.5.2 Pilot testing**

A pilot test was undertaken to detect faults in the design and instruments and to provide proxy data for selecting an acceptable probability sample. The instruments were pilot tested on a sample of 25 persons representing 0.8 percent of the target group.

#### **3.5.3 Instruments validity**

According to Somekh, validity is the degree to which test items accurately represent the test material (2006). According to this study, content validity is a measure of how well data acquired through a given instrument reflects a particular topic or concept. On the basis of the representativeness and relevance of the questions, as well as suggestions for change in the form of research instruments, it was decided to seek professional help. The researcher spoke with experts in the field to determine the study instrument's validity. This increased the data's validity. It eventually aided in the revision and modification of the study instrument, therefore enhancing its validity.

#### **3.5.4 Reliability of the instruments**

To increase the measure's reliability, a big number of relevant elements must be incorporated, a large number of persons must be tested, and test procedures must be developed. The researcher picked a 25-person pilot group from the target demographic to assess the study equipment's dependability. The instrument's dependability will be evaluated using internal consistency approaches such as Alpha Cronbach's alpha. From 0 to 1, the alpha value enhances reliability. In general, a reliability score of 0.6-0.7 implies adequate dependability; 0.8 or more suggests excellent reliability (Mugenda, 2008). The pilot data were incorporated into the entire investigation.

### **3.5.5 Procedure of Data collection**

To elicit critical information, the researcher sent questionnaires to appropriate respondents. Research assistants assisted the researcher in gathering data. The research assistants were instructed on how to grasp the research study and the objectives. Throughout their training, the research assistants learned about the various components of the questionnaire and how to engage with respondents. Self-administered surveys allow respondents to complete questions at their own speed and on their own time. By providing respondents time to ponder their responses, they alleviate some of the respondents' pressure (Monsen & Horn, 2008).

### **3.6.1 Data Presentation and Analysis**

Examination of what was discovered Mugenda asserts that researchers should be familiar with descriptive, inferential, and test statistics (2008). Prior to processing responses, a complete questionnaire was evaluated for consistency. The data were then coded to categorize the responses according to the codes. The majority of the quantitative data obtained in this study was evaluated using descriptive statistics such as SPSS (V. 21.0) and MS Excel.

### **3.8 Ethical Considerations**

Answers given by respondents ensured their confidentiality and anonymity is upheld. The study is voluntary, and a participant can always withdraw from this study. Respondents voluntarily took part in the study and can drop out when they wish to. Every participant would be informed on the main objective for conducting this study.



## **CHAPTER FOUR**

### **RESULTS AND DATA ANALYSIS**

#### **4.1 Introduction**

The section discusses the research findings on scrum agile techniques in ICT software projects at Kenyan Insurance Companies, including the data analysis, conclusions, presentation, and debate. SPSS was used to analyze the data, and the findings were presented as tables and pie charts with bar graphs for comparison. The data were analyzed using descriptive tools such as frequencies and percentages, as well as statistically significant patterns such as the average and standard deviation.

#### **Rate of response**

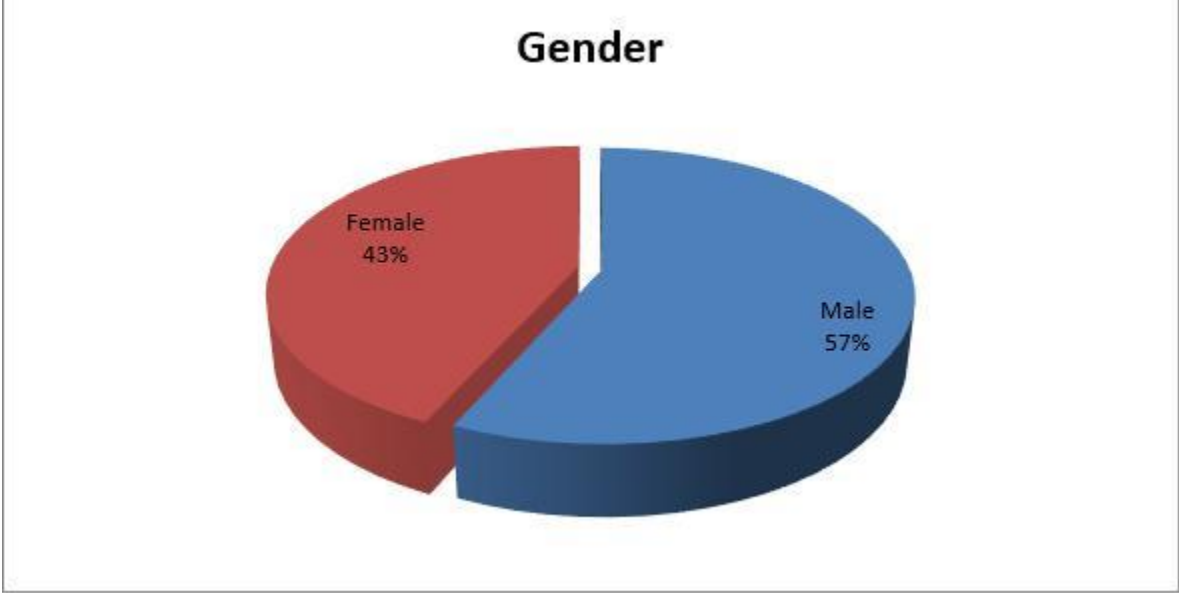
From 123 of the respondents 104 responded to the questionnaires, resulting in an 85 percent response rate.

#### **4.3. Respondents Background information**

The aim of the research was to examine all participants' demographic data. In this part, the evaluation of the competence, capability and understanding of the use of scrum agile methodology in ICT software projects in Kenya's insurance companies and their ability to manage questions was of significant importance.



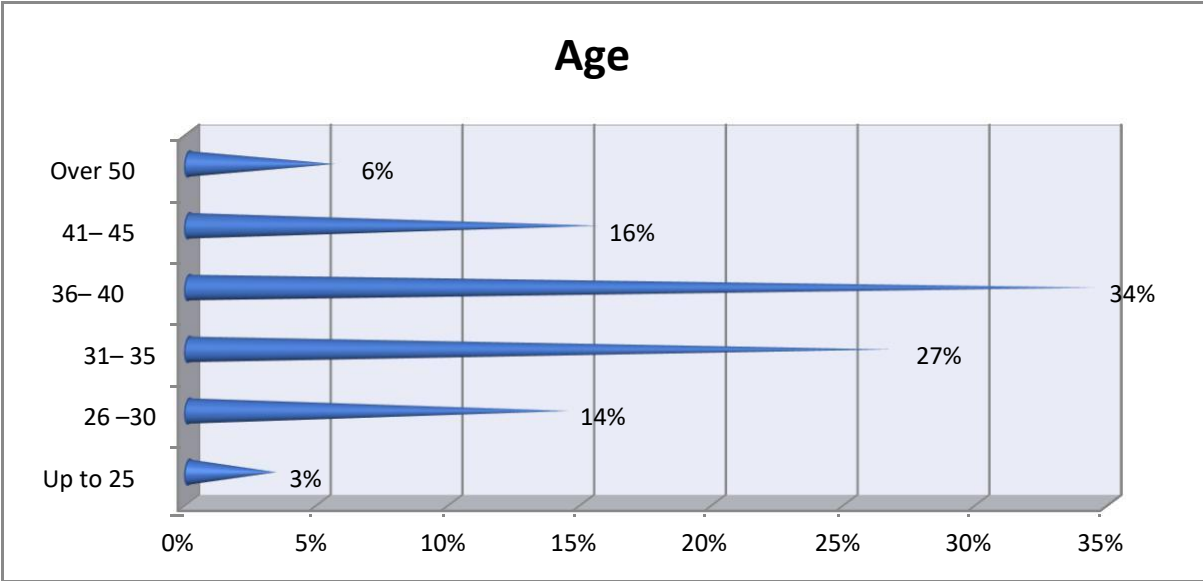
**4.3.1 Distribution of Respondents by Gender**



**Figure4: 1 Distribution of Respondents by Gender**

According to the pie chart above 43% of respondents in this study were female, whereas 57% were male. Our survey questions drew primarily male responses.

**4.3.2 Respondents Distribution by Age Bracket**

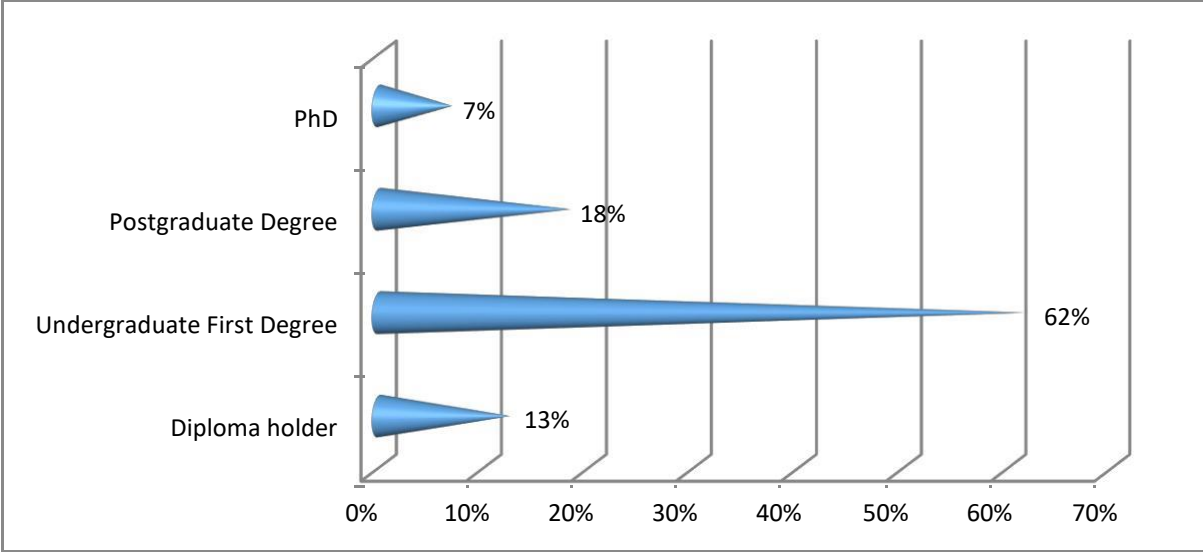


**Figure4: 2 Age Bracket**

The table above summarizes the data on the distribution of respondents by age group. 3 percent were under the age of 25, 14percent were between the ages of 26 and 30, 27percent were between the ages of 31 and 35, 34percentwere between the ages of 36 and 40, 16% were between the ages of 41 and 45, and 6 percent were beyond the age of 51.

**4.3.3 Respondents Distribution by level of education**

Following is a graph that showing the respondents' highest educational attainment.:

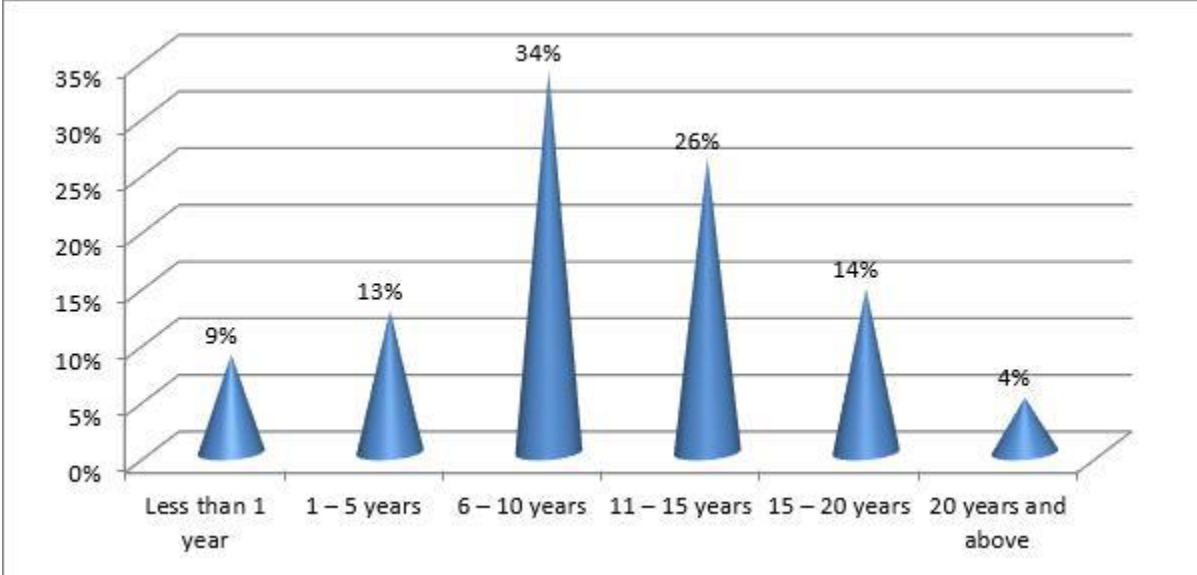


**Figure 4: 1 Education levels of respondents**

As seen in the accompanying graph, respondents were classified according to their highest educational degree. According to the statistics, 62 percent of respondents held a bachelor's degree, 18percent held a postgraduate degree, 13% held a diploma, and 7percent held an M.A. In other words, the ICT departments at each level have the same staffing levels. They collaborate closely with the customer or middleman from the start to the finish of a project. Their abilities and attitudes dictate the nature of the service they give (Lovelock & Wirtz, 2017).

**4.3.4 Length of the time working with Insurance companies in Kenya (in years).**

They sought to ascertain respondents' tenure with Kenyan insurance businesses (in years). The following graph summarizes the findings:



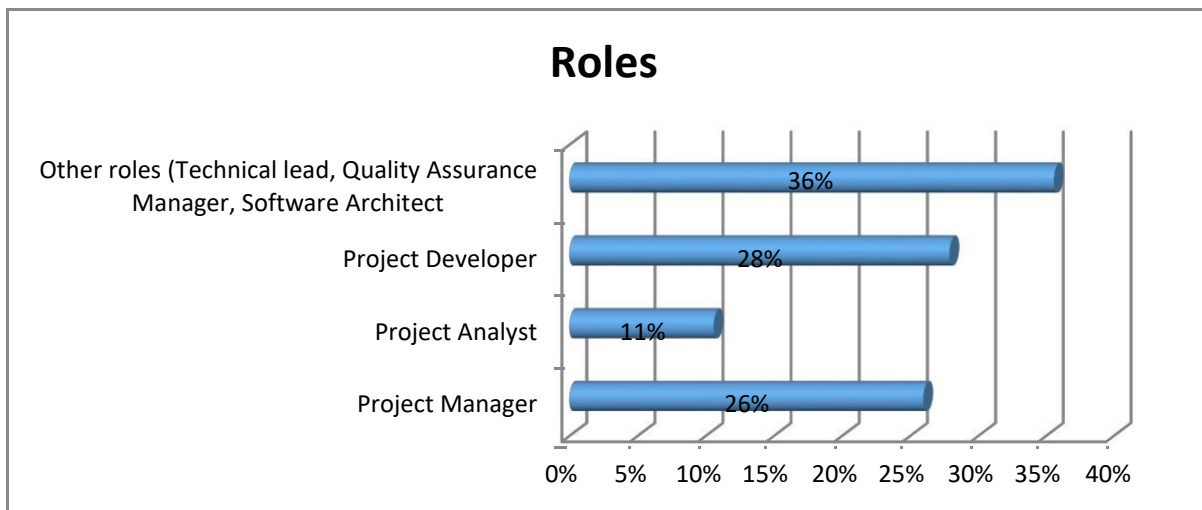
**Figure 4:2 Length of time working with the Insurance companies in Kenya**

The graph above displays how long respondents have worked for insurance companies (in years). 9 percent had worked for insurance companies for less than a year, 13% for one to five years, 34% for six to ten years, 26% for eleven to fifteen years, and 14% for more than fifteen years.

The amount of time respondents worked in insurance firms was a significant factor in determining the degree of competency of ICT software projects. An experienced firm's employees can manage a claim swiftly and efficiently, resolving any issues that arise.

#### 4.4 Role in the Software Project

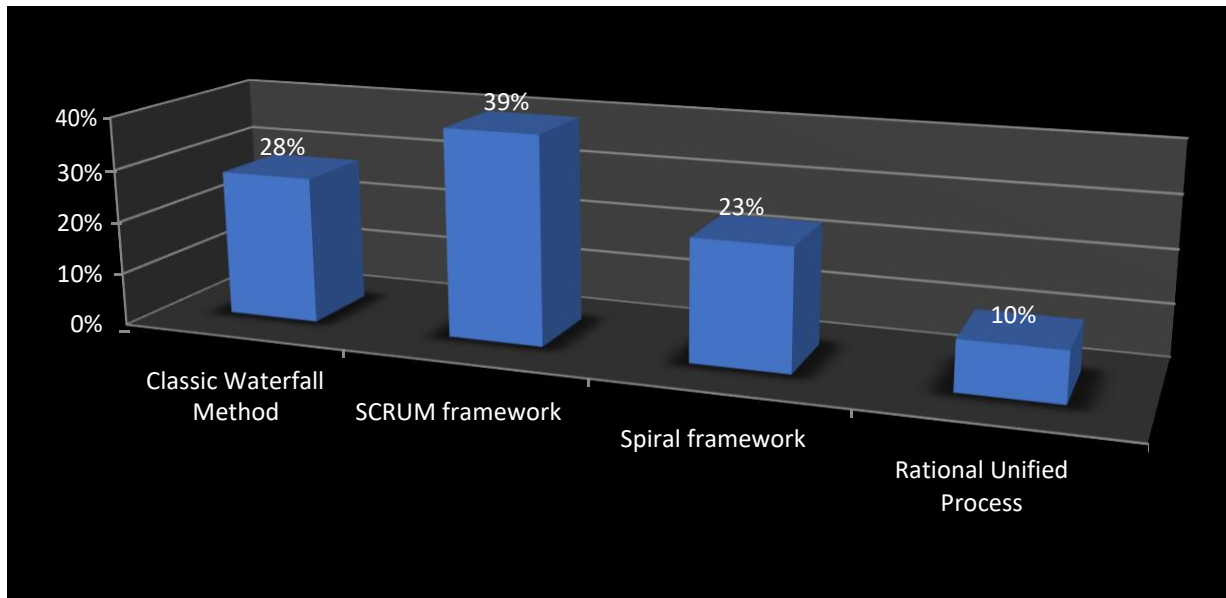
The purpose of the research was to determine each respondent's involvement in the project of software development.



Around 26% of responders were project managers, according to statistics. 11% of respondents were project analysts, 28% were project developers, and the remaining 36% were technical leaders, quality assurance managers, or software developers. The majority of respondents were able to answer the study questions due to their job title and responsibilities.

## 4.5 Agile Methodology

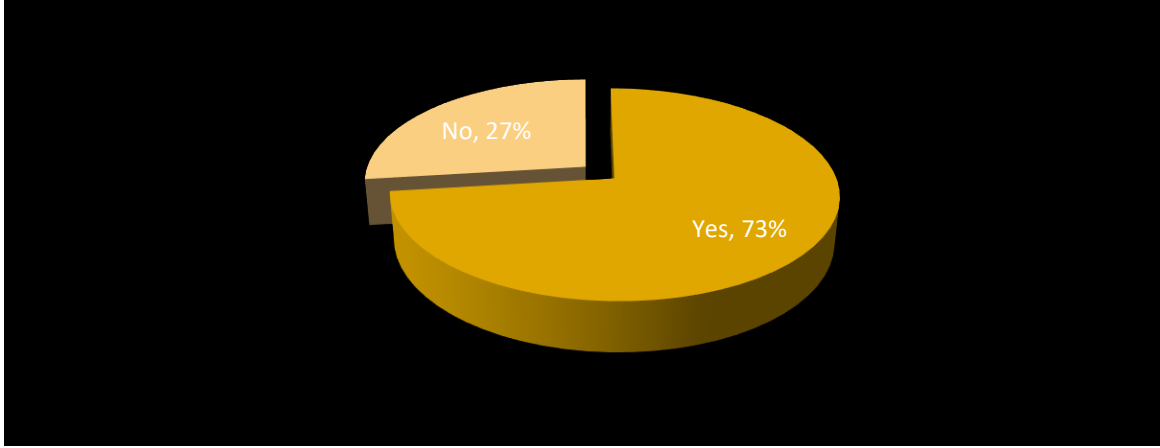
The study sought to find out the agile methodology that has been adopted by the respondents' insurance companies for their software projects.



According to the study, 28 percent of respondents employed a traditional waterfall methodology, while 39 percent used the FRAY framework. 23 percent of those interviewed used the spiral. 10 percent of respondents said they used the Rational Unified Process in their software development projects.

### 4.5.1 Software Development Standards

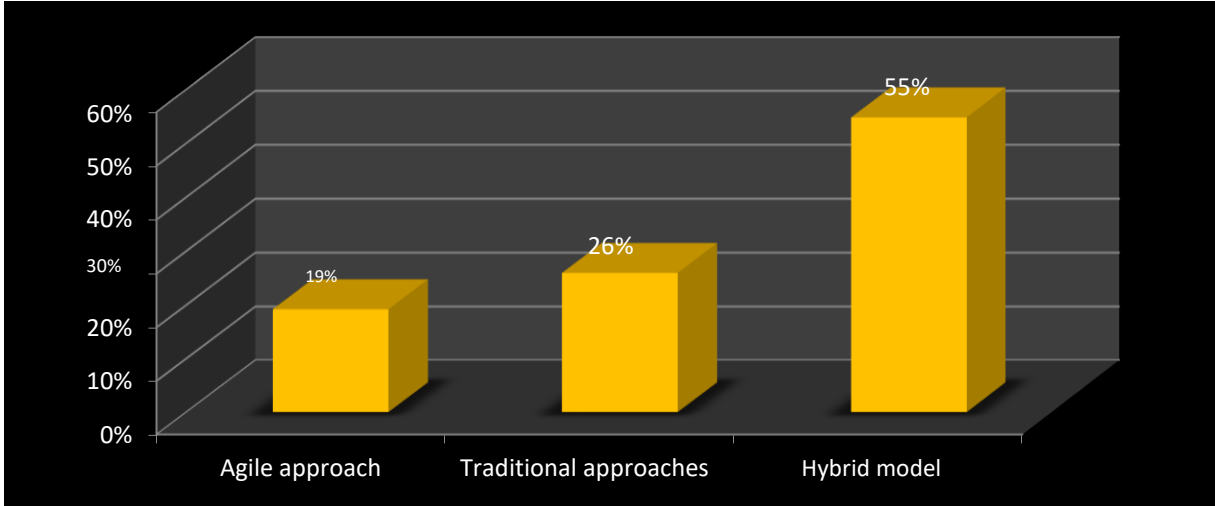
The research focused on determining if insurance companies adhered to software development standards throughout the process software engineering.



According to data, 73% of insurance firms adhere to software development standards throughout the software engineering process; 27% do not.

**4.5.2 Most Common Approach in Software Development**

The research further sought to establish the most common approach adopted by the insurance company in their software development project-related activities.



Researchers observed that 19% of insurance businesses utilized an agile strategy in their software development projects, 26% used traditional techniques, and 55% used a hybrid model that combined traditional and agile methodologies.

#### 4.5.3 Factors leading to the adoption of agile methodology

This was accomplished by calculating the mean and standard deviation of the degree of agreement expressed by respondents: "The following are the primary factors that contribute to your insurance company's adoption of agile methodology:" " The following are the primary factors that contribute to your insurance company's approval of an agile approach:

<b>Factors leading to the adoption of agile methodology</b>	<b>Mean</b>	<b>Std Dev</b>
Agile methodologies improve Job Performance	4.100	1.0981
Agile methodologies provide Helpful guidance	3.764	1.8345
Agile methodologies used increase Productivity	3.401	0.9561
Agile methodologies give greater Control	4.227	1.2072
Agile methodologies enhance project Effectiveness	4.651	0.6081
Agile methodologies used is understandable	3.009	0.9081
Agile methodologies simplify software Maintainability	3.400	1.4388
Agile methodologies used enables us to work more quickly	2.101	0.9561

A mean score of 4,100 indicates that respondents feel agile techniques enhance efficiency. Due to the fact that respondents believed agile techniques were beneficial, the average score was 3,764. As seen by the median score of 3,401, it was unknown whether Agile methodologies increased productivity.

A mean score of 4,227 indicates that respondents believe Agile approaches give greater control.

The majority of interviewees believed that Agile approaches improve the project's effectiveness.

With an average score of 3,099, respondents indicated that they were unconcerned with the intelligibility of the Agile methodologies used in their projects. As demonstrated by a mean score of 3,400, respondents thought that Agile methods facilitated software maintenance. A median score of 2,101 suggested that respondents were skeptical about the ability of Agile approaches to speed up work.



#### **4.6 Agile Methodology Adoption Success Factors**

The Research partakers were asked to rate how much they agreed or disagreed with certain statements about agile adoption by Kenyan insurance companies based on a mean and a standard deviation. From 1 to 5, 1 indicates a strong disagreement, 2 indicates a strong disagreement, 3 indicates neutral agreement, 4 indicates agreement, and 5 indicates a strong agreement.

	Mean	Std Dev.
<b>Organizational</b>		
Strong Executive Support	4.001	0.6021
Committed sponsor or manager	3.747	1.0127
Cooperative organizational culture instead of hierarchal	4.294	1.7301
Oral culture placing high value on face-to-face communication	2.966	0.2025
Organizations where agile approach is universally accepted	3.111	1.0071
Facility with proper agile-style work environment	3.568	0.6088
<b>People</b>		
Team members with high competence and expertise	4.732	1.0981
Team members with great motivation	4.764	1.8304

## Organizational

With a mean score of 4.001, respondents believed that strong executive support for agile methodology adoption was a success factor. As demonstrated by a mean score of 3,747, respondents agreed on an involved sponsor or manager. As an average of 4,294, respondents preferred a cooperative company culture to a hierarchical one. Oral culture was moderately rated by interviewees, with a mean score of 2,966. As demonstrated by the average score of 3,111, organizations that have widely adopted agile techniques have a better chance of success. The average score for agile work environments is 3.568.

## Persons

When respondents were asked whether having team members with a high level of knowledge and experience was a success factor in the adoption of agile techniques, a mean score of 4.732 was

obtained. As seen by their average score of 4,764, respondents overwhelmingly agreed that members of the highly motivated squad should be included. According to interviewees, agile process managers are a crucial success factor for adopting agile processes, as evidenced by an average score of 3,501. Respondents preferred managers with a light-touch or flexible management style, as evidenced by a median score of 4,722. Coherent, self-organizing cooperation received an average score of 3,651, while excellent customer relationships received an average score of 3,911.

According to Chow (2009), individuals with superior abilities, expertise, and motivation make excellent team members (Skills). Chow (2009) cites a lack of essential skills, a lack of cooperation, and hostility from organizations or individuals as reasons why agile projects are not adopted. One of the reasons Turkish failed is because people are unwilling to adopt agile (2008).

## **Process**

There was agreement among respondents on the efficacy of agile processes when used in conjunction with agile requirements management approaches. The mean score was 2.91. With a mean score of 3.44, participants agreed to embrace agile project management techniques. As demonstrated by an average score of 3,924, the majority of respondents agreed that they will adopt an agile configuration management strategy in the future. According to a mean score of 3.09, respondents believed that regular face-to-face encounters were important for effective communication. As evidenced by an average score of 3,181, respondents agreed that regular work hours should be followed – no overtime. Consumer loyalty and presence were critical, as evidenced by an average 3,263 score. When asked whether complete control of the client is a critical success factor in implementing agile methodologies, respondents had varying opinions, as seen by their mean score.

Lindvall suggest that culture, people, and communication are the three critical components of an agile development strategy's effective adoption (2018). To thrive, a business's culture must promote agile adoption (Lindvall, 2005). Agile methodologies necessitate the presence of skilled individuals or team members. For instance, developers must be given the freedom to select without being continuously questioned and weighed (Lindvall, 2005). Another critical component of a flexible work environment is effective team communication (Lindvall, 2017).

#### 4.7 Setbacks Experienced During the Adoption of Agile Methodologies

According to the poll, the following setbacks have a negative effect on the insurance industry when agile approaches are implemented. One is comparable to no extent, two is equivalent to a little extent, three is equivalent to a moderate extent, and five is equivalent to an exceedingly large extent.

	Mean	Std Dev.
<b>Organizational</b>		
Lack of executive sponsorship	3.933	0.99
Lack of management commitment	3.071	1.00
Organizational culture being too traditional	3.022	1.02
Organizational culture being too political	3.494	0.87
Organization being too large	3.759	1.20
Lack of agile logistical arrangements	4.410	0.92
<b>People</b>		
Lack of the necessary skill set	3.092	0.91

Lack of project management competence	2.047	1.00
Lack of teamwork	2.499	0.71
Resistance from groups or individuals	3.881	0.59
Bad customer relationship	4.404	0.71
<b>Process</b>		
Ill-defined project scope and project requirements	3.911	0.4814
Ill-defined project planning	3.364	1.0127
Ill-defined customer role	3.929	1.0909
Lack of agile progress tracking mechanisms	3.009	0.1125
Lack of customer presence	3.181	1.1471

## Organizational

As shown by a median score of 3,933, respondents thought that the insurance company's use of agile methodologies was harmed by a lack of managerial support. As demonstrated by a mean of 3,071, respondents believed that executive commitment was lacking and the organizational culture was too conventional. As evidenced by an average of 3,022, respondents thought corporate culture was excessively political. Respondents strongly agreed that the organization was enormous, as evidenced by a mean score of 3.75. As shown by an average score of 4,410, logistics strategies need greater adaptability.

As Jain (2017) notes, the scrum agile approach alters the organization's whole structure. Resistance to change may be evident in all of these areas, as the company's structure is different

and employees are accustomed to adopting strict work habits over an extended period of time. Each employee in the organization works more closely using Scrum agile methodologies. The exchange of knowledge is a critical component of this strategy's effectiveness. On the other hand, lack of communication and collaboration are frequently cited as grounds for resistance. Depending on the situation, departmental divisions or even ad hoc collaborations may be formed. Scrum agile techniques must overcome these obstacles if they are to succeed ( Jain,2017).

## **People**

As demonstrated by a mean score of 3,092, there was widespread agreement that the shortage of required skills affected the insurance industry's adoption of agile approaches. As indicated by their average score of 2.047, respondents believed they lacked modest project management abilities. According to the average of 2.499, respondents saw a lack of collaboration. As indicated by the average score of 3,881, respondents believed that organizations or individuals will likely oppose change. Finally, the majority of respondents (4.404) agreed that when agile approaches were applied, bad customer relations had a negative influence on the insurance business.

According to Abdelshafi (2016), one of the most significant issues is a lack of fundamental proficiency in scrum agile methodologies. Due to a lack of accessible training and time constraints, training programs may assist ease this issue. Two critical characteristics are experience and devotion. However, because scrum agile methodologies are unique, businesses often struggle to adopt a set of principles based on prior project experiences. Rather than that, individuals that use scrum agile methodologies should be more adaptable to a variety of tasks. Agile techniques establish two types of accountabilities: shared accountability for the end product and individual accountability for each member's contribution (Abdelshafi,2016).

## **Process**

As averaged by 3.911, respondents agreed that unclear project scope and requirements affected insurance firms' use of agile methodologies. Undefined project planning is generally acknowledged, as evidenced by a mean score of 3.344. By a margin of 3,929, respondents agreed on the unclear role of the consumer. Participants agreed on the absence of agile progress tracking tools, as indicated by a mean of 3,009 points, and on the absence of client presence (a mean of 3.181 points).

System integration presents a variety of challenges, particularly in larger, more sophisticated projects. Numerous these projects need us to combine components from a variety of sources. Another issue is the integration of modules with disparate technology. Complex projects may necessitate the explicit identification of several product owners (Conboy et al., 2017).

## **CHAPTER FIVE**

### **FINDINGS SUMMARY, CONCLUSIONS AND RECOMMENDATIONS**

#### **5.1 Introduction**

This section describes the study results and conclusions. Additionally, the chapter contains recommendations based on the study's results and conclusions.

#### **5.2 Summary of Findings**

This research included 43percent of women and 57 percent of males. Males overwhelmingly responded to our polls. We divided respondents into age groups: 3percent were under the age of 25, 14percent were between the ages of 26 and 30, 27percent were between the ages of 31 and 35, 34percent were between the ages of 36 and 40, 16percent were between the ages of 41 and 45, and 6percent were beyond the age of 51. 62percent of students held a bachelor's degree, 18percent held a postgraduate degree, 13percent held a certificate, and 7percent held an MA.

9 percent had worked for insurance companies for less than a year, 13percent for one to five years, 34percent for six to ten years, 26percent for eleven to fifteen years, and 14percent for more than fifteen years. Around 26% of responders were project managers, according to statistics. 11% of respondents were project analysts, 28percent were project developers, and the remaining 36% were technical leaders, quality assurance managers, or software developers.



According to the study, 28percent of respondents employed a traditional waterfall methodology, while 39percent used the SCRUM framework. 23percent of those interviewed used the spiral. 10percent of respondents said they used Rational Unified Process in their software development initiatives. 73percent of insurance companies adhere to software engineering standards, whereas 27percent do not. The majority (55 percent) of insurance businesses adopted a hybrid strategy for their software development projects, combining traditional and agile methodologies.

Agile techniques improve work performance, agile methodologies give effective support, agile approaches promote productivity, and agile methodologies provide greater control, according to a 4,227-mean score among respondents. The majority of interviewees believed that Agile approaches improve the project's effectiveness. With an average score of 3,099, respondents indicated that they were unconcerned with the intelligibility of the Agile methodologies used in their projects. According to an average score of 3,400, respondents believed that Agile approaches ease software maintenance. A median score of 2,101 suggested that respondents were skeptical about the ability of Agile approaches to speed up work.

According to data, strong management support is critical for implementing agile approaches. According to a mean score of 4.001, respondents agreed with this assertion. A ruthless manager or boss Face-to-face and informal communication are highly valued in cooperative corporate cultures, in contrast to hierarchical oral culture. As seen by the average score of 3,111, organizations with an agile strategy are frequently successful in adopting agile methodologies.

When respondents were asked whether having team members with a high level of knowledge and experience was a success factor in the adoption of agile techniques, a mean score of 4.732 was obtained. Team members with a high level of enthusiasm, as well as supervisors that are familiar with Agile or flexible management styles. Cohesive and self-sufficient teamwork Agile techniques require strong customer relationships. You may either make or break a project. As seen by the respondents' average score of 3,911, they agreed.

There was agreement among respondents on the efficacy of agile processes when used in conjunction with agile requirements management approaches. The mean score was 2.91.

Method of project management based on adaptive and flexible principles Process of Management Configuration The average score of 1,91 indicated that respondents disagreed with the following statements: "strict communication with daily face-to-face meetings," "adherence to a standard work schedule without overtime," and "significant consumer participation and presence."

### **5.3 Linking Findings to the Objectives**

**Research Objective 1:** *To assess the adopted agile methodology by Insurance Companies in Kenya.*

Based on the responses to the questionnaire, scrum agile is the methodology that has been adopted by insurance companies in Kenya for their software projects. The research also established that there is still a need to sensitize insurance companies to adopt scrum agile in all their projects to realize maximum benefits.

**Research Objective 2:** *To find out the success factors that affects the process of adopting agile methodology by Insurance Companies in Kenya.*

Based on the Literature Review in Chapter 2 and the responses from the questionnaire, there are some factors that greatly affect the adoption of agile methodology in insurance companies in Kenya. These factors include organizational factors, people willingness and cooperation as well as processes that are already defined within an organization.

**Research Objective 3:** *To identify the setbacks that affects the process of adopting Agile methodology by Insurance Companies in Kenya.*

Through analysis of responses to the questionnaires, the study has shown that the same factors that affect adoption can at the same time be the setbacks that hinder successful adoption of agile methodology. Organizational culture, people resistance and rigid processes in place can be the detriments for successful adoption.

## **5.4 Conclusion**

Insurance companies adhere to criteria when it comes to software engineering, and Scrum is an ideal Agile approach for the exact, accurate, and rapid creation of software products. Assigning responsibilities to all team members is a logical and manageable step in the project management process.

Agile approaches have been shown to raise employee happiness, give helpful support, boost productivity, improve project management, and simplify software maintenance, allowing teams to operate more efficiently, depending on the study's findings.

There was an agile methodology in place when it was determined that strong executive support and an enthusiastic sponsor or manager were necessary for success, an oral culture emphasizing

direct contact with colleagues, well-qualified and experienced teams, and a strong emphasis on communication through daily face-to-face meetings.

It was discovered that the scrum agile technique has a significant influence on the overall organizational structure. Resistance to change may be evident in all of these areas, as the company's structure is different and employees are accustomed to adopting strict work habits over an extended period of time. Each employee in the organization works more closely using Scrum agile methodologies. The exchange of knowledge is a critical component of this strategy's effectiveness.

## **5.5 Recommendations**

According to a new study, insurance companies should follow the Software Engineering Standards, and Agile Scrum is the most recommended Agile approach to developing precise and adapted software products.

In addition, research indicates that insurance companies use agile approaches to enhance employee satisfaction, provide helpful support, increase productivity, increase project control, simplify the maintenance of software and make it possible for teams to work faster.

It was argued that a CEO of an insurance company should work with a committed sponsor or management. Organizational cultures with cooperative structures favor those with hierarchical structures. A strong oral culture which highlights face-to-face communication and regular face-to-face meetings.

## **5.6 Limitations of the study**

The study was limited to Kenya Insurance companies operating within the County of Nairobi and have been in existence for more than five years. Thus, respondents from other insurance companies were omitted.

Getting to the entire set of insurance companies to get their response was not possible due to time and material constraints.

## **5.7 Suggestions for further study**

From the research findings, it is recommended that more research be done on insurance companies and their internal processes to ascertain the best approach that suits them. The findings indicated that in insurance companies use different methodologies in different projects.

The study further recommends that insurance companies invest in continuous staff training on agile development methodologies in order to reap maximum benefit from them.

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## APPENDICES

### Appendix i: Letter of Introduction to Respondents

**Eliazer Kipsang Singoei**

**P54/7505/2017**

To whom it may concern,

Dear Sir/Madam

#### **REF: REQUEST FOR RESEARCH DATA**

I am student at of The University of Nairobi pursuing a of Master of Science in Information Technology Management. Your organization has been selected to take part in a study I am undertaking titled *“adoption levels of agile methodology by Insurance companies in Kenya”* Herein attached, find a questionnaire designed to assist in collecting the necessary data for this research. The study is purely for academic purposes and all information collected from you shall be treated as confidential. In no way shall your name appear in the final report. Upon your request a copy of the thesis shall be availed to you. Your assistance, cooperation and honest responses will be highly appreciated.

Yours faithfully,

.....

**Eliazer Kipsang Singoei**

## Appendix ii: Research Questionnaire

Please tick [ ] appropriate boxes where applicable

### Section A: Background Information

1. Gender:

Male [ ] Female [ ]

2. Age Bracket:

Up to 25 [ ] 26 –30 [ ] 31– 35 [ ]  
36 –40 [ ] 41– 45 [ ] Over 50 [ ]

3. Highest education level

Diploma [ ] Undergraduate First Degree [ ]  
Postgraduate Degree [ ] PhD [ ]

4. For how long have you worked in Kenya’s insurance industry IT department (in years)?

Up to 1 year [ ] 1 – 5 [ ] 6 – 10 [ ] 11 – 15 [ ] Over 15 years [ ]

5. What is your role in the software Project?

Project Manager [ ]

Project Analyst [ ]

Project Developer [ ]

Other roles (Technical lead, Quality Assurance Manager, Software Architect  
among others) [ ]

### Section B: Agile Methodology

6. What agile methodology has been adopted by your Insurance Company in its software projects?

Classic Waterfall Method [ ]

SCRUM framework [ ]

Spiral framework [ ]

Rational Unified Process [ ]

7. Does your organization follow software development standards during software engineering process?

Yes [ ]      No [ ]

8. Which is the most common approach adopted by you insurance company in their software development project-related activities?

Agile approach [ ]

Traditional approaches [ ]

Hybrid model (comprising of a mix balance between traditional and agile approach [ ]

9. On a scale of 1-5(where 1= strongly disagree, 2= disagree, 3= neutral, 4= agree and 5= strongly agree) please rank your level of agreement with the following statements related to the key factors leading to the adoption of agile methodology in your insurance company.

	1	2	3	4	5
Agile methodologies improve Job Performance					

Agile methodologies provide Helpful guidance					
Agile methodologies used increase Productivity					
Agile methodologies give greater Control					
Agile methodologies enhance project Effectiveness					
Agile methodologies used is understandable					
Agile methodologies simplify software Maintainability					
Agile methodologies used enables us to work more quickly					

**Section B: Agile methodology success factors**

10. Below are statements on the success factors that affect the process of adopting agile methodology by Insurance Companies in Kenya. On a scale of 1-5 (where 1= strongly disagree, 2= disagree, 3= neutral, 4= agree and 5= strongly agree) please rank your level of agreement with each statement by ticking the appropriate box.

	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>Organizational</b>					
Strong Executive Support					
Committed sponsor or manager					
Cooperative organizational culture instead of hierarchal					
Oral culture placing high value on face-to-face communication					
Organizations where agile approach is universally accepted					
Facility with proper agile-style work environment					
<b>People</b>					
Team members with high competence and expertise					

Team members with great motivation					
Managers knowledgeable in agile process					
Managers who have light-touch or adaptive management style					
Coherent, self-organizing teamwork					
Good customer relationship					
<b>Process</b>					
Following agile-oriented requirement management processes					
Following agile-oriented project management process					
Following agile-oriented configuration management process					
Strong communication focus with daily face-to-face meetings					
Honoring regular working schedule – no overtime					
Strong customer commitment and presence					
Customer having full authority					

### Section C: Setbacks Experienced During the Adoption of Agile Methodologies

On a scale of 1-5 (where 1= Very great extent, 2= Great extent, 3= Moderate extent, 4= Low extent and 5= No extent at all) please indicate the extent to which the below setbacks affect your Insurance company during the adoption of agile methodologies by ticking the appropriate box.

	<b>Very great extent</b>	<b>Great extent</b>	<b>Moderate extent</b>	<b>Low extent</b>	<b>No extent at all</b>
<b>Organisational</b>					

Lack of executive sponsorship					
Lack of management commitment					
Organisational culture being too traditional					
Organisational culture being too political					
Organisation being too large					
Lack of agile logistical arrangements					
<b>People</b>					
Lack of the necessary skill set					
Lack of project management competence					
Lack of team work					
Resistance from groups or individuals					
Bad customer relationship					
<b>Process</b>					
Ill-defined project scope and project requirements					
Ill-defined project planning					
Ill-defined customer role					
Lack of agile progress tracking mechanisms					
Lack of customer presence					