



**UNIVERSITY OF NAIROBI  
SCHOOL OF COMPUTING AND INFORMATICS**

**UTILIZATION OF MOBILE TECHNOLOGY IN DISSEMINATION OF  
INFORMATION FOR PENSION CLAIMS PROCESSING IN JUBILEE  
INSURANCE**

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**A project report submitted to University of Nairobi in partial fulfillment of the  
requirement for the award of a Master of Science in Information  
Technology Management Degree**

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## **DECLARATION**

This research project is my original work and has not been presented for the award of a degree in this university or any other institution of higher learning for examination.

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## **APPROVAL**

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Date \_\_\_\_\_

## **DEDICATION**

I would like to dedicate this work to my mother Elizabeth and my sisters, Susan, Agnes and Winfred for their endless love, support and encouragement throughout the study period. They have been an inspiration and have taught me the essence of hard work.

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## ABBREVIATIONS AND ACRONYMS

<b>B2B:</b>	Business-To-Business
<b>B2C:</b>	Business-To-Consumer
<b>C2B:</b>	Consumer-To-Business
<b>C2C:</b>	Consumer-To-Consumer
<b>CIC:</b>	Cooperative Insurance Company
<b>CRM:</b>	Customer Relationship Management
<b>ICT:</b>	Information and Communication Technology
<b>IT:</b>	Information Technology
<b>NSE:</b>	Nairobi Securities Exchange
<b>QDA:</b>	Qualitative Data Analysis
<b>SN:</b>	Subjective Norm
<b>USSD:</b>	Unstructured Supplementary Service Data
<b>BoP:</b>	Bottom of the Pyramid
<b>NLMIS:</b>	National Livestock Marketing Information System

## ABSTRACT

Over previous decade, Kenya has carried out main reforms in pension system in both private and public sector. One main reform among pension providers in Kenya has been to utilize mobile technology to improve information dissemination for pension claims processing. However, despite the use of mobile applications, short message services, USSD and voice calls, dissemination of information for pension claims processing still remains poor. The study deployed a descriptive study design. The target population in this study was 561 pensioners in Jubilee Insurance and 8 heads of pension business, finance, legal services, internal audit, operations, information and communication technology, actuary, business development and strategy and business development departments. The sample size of this study was obtained by use of Krejcie and Morgan formula of determining sample size. Because of the small number of heads of departments, they were not sampled. This study employed systematic sampling method to choose 288 pensioners from the list of pensioners in Jubilee Insurance. The study utilized primary data as well as secondary data. Moreover, secondary data was acquired from the yearly reports of Jubilee Insurance. Key informant interviews and semi-structured questionnaires were deployed to acquire primary data. Semi structured questionnaire in this research produced qualitative and quantitative data, which was differently analyzed using diverse techniques. The key informant interview guide produced qualitative data. For analysis of qualitative data, this study employed content analysis and then findings were given in a narrative form. Inferential and descriptive statistics were deployed to analyze quantitative data. Descriptive statistics comprise of frequencies and percentages, measures of central tendency and measures of variability, inferential statistics consists of regression analysis and correlation analysis. The study concludes that mobile application has a positive and significant association with dissemination of information for pension claims processing in Jubilee Insurance. In addition, the study revealed that text messages have a positive and significant influence on dissemination of information. Further, this study concludes that unstructured supplementary service data (USSD) has a positive and significant influence on dissemination of information. The study findings also revealed that voice calls have a positive and significant influence on dissemination of information for pension claims processing in Jubilee Insurance. From the findings, the study recommends that Jubilee Insurance should encourage more clients to install the mobile application to enable them access information on their claims from their phones anytime and from anywhere. Further, the company should ensure regular texts are sent to clients updating them on their claims and informing them on their claims status.

# CHAPTER ONE

## INTRODUCTION

### 1.1 Background of the Study

Over the past decade, the importance of pension claims to the economic stability of nations and the security of their aging populations has increasingly been recognized by countries at all levels of development (Shen & Williamson, 2010). Many pension systems, primarily, those with a dominant publicly managed defined-benefit design have major fiscal challenges and are characterized by inefficiencies in pension claims processing, which are attributed to poor dissemination of information. As such, many do not fully deliver on their social objectives of poverty alleviation and income smoothing (Kun, 2013). Many countries have not yet developed meaningful pension and retirement savings systems and have not achieved access to these among the broad base of the population. This exposes many elderly people to the risk of a severe decline in their living standard or descent into poverty when they are no longer able to work. In addition, Park, Stanko and McShane (2019) report that the number of individuals (workers) contributing to private pension arrangements is declining, with the main reasons being inefficiencies in dissemination of information. According to Gallery and Gallery (2016), mobile technology potentially leads to improvement in information dissemination and hence a take-up of private pension, in particular voluntary pension systems. This can be the case especially for certain categories of the population such as the young, the self-employed, workers in the informal sector among others.

Traditionally, information dissemination has been treated as a one-way transaction, where information was transferred to a passive recipient through information dissemination channels. Dissemination was perceived as a linear, mechanical process of “transfer”, in which knowledge is packaged and moved from one “place” to another, much as an appliance might be packaged and shipped (Park, Stanko & McShane, 2019). Today, there are several types of dissemination, which include spread, choice, exchange and implementation. Spread is a one-way diffusion or distribution of information while choice is a process that actively helps users to seek and acquire alternative sources of information and learn about their options (Gallery & Gallery, 2016).

In addition, exchange involves interactions between people and the multidirectional flow of information; and implementation: which includes technical assistance, training, or interpersonal activities designed to increase the use of information or to change attitudes or behavior of individuals.

Ashwell (2017) indicates that mobile technology present a range of opportunities for the pension industry and is seen as a catalyst of growth with new channels to reach a wider range of individuals. Mobile technology may favor greater dissemination of information as well as communication between players in an industry (Kun, 2013). Moreover, mobile technology can also speed up information dissemination need for transactions, reduce the number of intermediaries, contribute to the optimization of administrative and operational processes and therefore reduce costs.

Adoption of mobile technology may help to engage individuals with private pension. These tools may facilitate real-time access to key pension information, allow individuals to better plan, manage retirement savings, and ultimately increase their retirement contributions and savings (Theurillat & Corpataux, 2017). In some jurisdictions, supervisors are developing their own mobile technology tools to raise awareness and facilitate understanding and use of pension products and services to improve dissemination of information and hence improve pension administrative procedures. These tools provide more efficient data collection, storage and faster processing of the users' information and facilitates higher quality services and experiences for users at lower costs.

Globally, however, mobile technology in the pension industry is still in a nascent and experimental stage, touching only certain areas of pension service providers' activities (Arbelaez & Milman, 2012). This quite cautious take-up of mobile technology in the private pension sector could be explained by a large variety and complexity of pension arrangements and optionality embedded in pension (Park, Stanko & McShane, 2019). Moreover, pension markets tend to be highly regulated in most jurisdictions with products standardized and fees controlled. However, despite this slow start compared to other sectors (retail trade) or segments of the financial sector, some pension providers are embracing mobile technology.

### **1.1.1 Mobile Technology**

Mobile technology create new or modify existing business processes, culture, and customer experiences to meet changing business and market requirements (Ashwell, 2017). Organizations, both public and private, have in the last one decade been using mobile technology to improve dissemination of information, efficiency of administrative procedures, reduce administrative costs and offer higher quality services and experiences for the users (Gallery & Gallery, 2016). In the insurance industry, mobile technology in the use of mobile applications, short message services, USSD and voice calls is enabling insurers in the dissemination of information. In pension processing, insurance companies have specifically adopted mobile technology such as mobile applications, short message services, unstructured supplementary service data and voice calls (Arbelaez & Milman, 2012).

Pension scheme providers are adopting their online services into mobile applications (apps) to enhance their services and engagement with members through mobile means as it increases the speed of information dissemination. Often, mobile apps include pension calculators. The main purpose of these e-tools is to provide key pension information digitally to savers, which ultimately may bring significant cost savings to plans and participants (Park, Stanko & McShane, 2019). These tools may also offer digital payment solutions (through e-banking or mobile transfer services) to facilitate making pension contributions, fund switches, receive news or personal messages - developments believed to encourage retirement savings. Large public-sector pension plans have developed mobile apps for all aspects of member communication and plan administration. Some members can even apply for their retirement benefits through the plan app (Shen & Williamson, 2010).

Developments in mobile technology are creating more friendly, social and fun environments for retrieving and sharing information, and one of such is the mobile applications (Gallery & Gallery, 2016). Information on mobile applications enhance the process of information dissemination and amplify the influence of that information (Arbelaez & Milman, 2012). Technological innovation in mobile money transfer services, which is changing the way financial and pension services/products are distributed plays a pivotal role.

In Mexico, a mobile application known as AforeMovil offers new channels to engage people with their individual account and facilitate making contributions to their pension account in compliance with pension regulation (Arbelaez & Milman, 2012). In Kenya, the Mbao Pension Plan allows clients to obtain information of pension claims, deposit, withdraw and transfer money easily with the use of a mobile device. The experiment attracted much interest from other supervisory authorities and similar initiatives were launched or are under development in other countries such as Ghana, Nigeria, Tanzania and India to address coverage gaps in the informal sector. In addition, mobile applications for smart phones are used by clients to check on various pension claims' transactions.

Insurance industry has been traditionally slow with technology adoption; but it is now jumping on the mobility bandwagon and devising its own mobility-specific strategies to compete in the market. Mobile technology offer a tremendous opportunity to transform the business process across the insurance value chain (OECD, 2019). From self-service apps to transaction-based apps, they lay a solid foundation to provide agile, responsive and user-friendly format that can reduce costs by decreasing the volume of work and administrative staff required to handle the ensuing paperwork. (Ernest & Young, 2018).



### **1.1.2 Jubilee Insurance**

The Jubilee Insurance of Kenya is one of the main players in the Kenyan insurance industry. The company has been listed at the Nairobi Securities Exchange (NSE) since 1973. It was the second insurance company to be listed in the NSE, and is among the longest listed companies at the Nairobi based bourse. Jubilee Insurance is a wholly owned subsidiary of Jubilee Holdings Ltd, a multinational insurance holding company, which maintains its headquarters in Kenya. Jubilee Insurance operates in Pakistan, Uganda, and Tanzania, and has spread its reach deeper into the East and Central African Markets. Its strong financial position make it one of the most prosperous insurance company in Kenya, and is one of the most reliable insurers in the country (Jubilee Insurance, 2019).

The vision of Jubilee Insurance Limited is enabling people to overcome uncertainty and the mission is to provide solutions to protect the future of clients . The values of Jubilee Insurance Limited include integrity, passion, excellence and teamwork (Jubilee Insurance, 2019). The company has strong interests in both personal and corporate insurance. The company has a wide portfolio of insurance products to meet every imaginable insurance need. These products include medical insurance, motor vehicle insurance, machinery breakdown, travel insurance, personal accident, domestic package policy among others. The company boasts of its commitment to make claims settlements without drama, a statement that indicates its commitment to a seamless insurance experience (Jubilee Insurance, 2019).

Jubilee Insurance offers personal pension plan, group personal pension plan, occupational retirement benefit scheme and Jubilee umbrella scheme. A personal pension plan is a long-term investment that aims to help you build up a pot of money that you can use for your retirement. A group personal retirement plan denotes a collection of personal pension plans usually provided by employers for their employees. Occupational retirement benefit schemes are set up as defined contribution schemes where the amounts of contribution by both employer and employee are determined at the start of the scheme. Umbrella schemes allow multiple, unrelated employers to participate in a single pension scheme. They are popular among organizations due to their cost-effective and “hands free” nature (Jubilee Insurance, 2019).

## **1.2 Statement of the Problem**

Over the last decade, Kenya has undertaken a major reform of parts of its pension system in both the private and the public sector. Whereas the primary motivation for reform of pension systems in many countries worldwide has been to address the growing fiscal burden of pension liabilities, in Kenya the major driver for reform was to improve information dissemination, and strengthen the governance, management and effectiveness of the existing pension system. A survey by the Unclaimed Property Asset register found that insurance firms hold 15 per cent of unclaimed funds with a huge per cent belonging to pensioners. One main reform among pension providers in Kenya has been to utilize mobile technology through technology adoption to improve information dissemination for pension claims processing. However, despite the use of mobile technology including the adoption of mobile applications, short message services, unstructured supplementary service data and voice calls, dissemination of information for pension claims processing still remains poor.

Nyabuto and Wanyoike (2018) indicate that in the financial year 2016/2017 processing time for standard pension claims was 14 working days against set target of 12 days for the said year. This was attributed to lack of effective flow of information between the insurance companies and the clients and between various departments in the insurance companies. In addition, Njuguna (2010) indicates that the consumers accused the pension departments of taking too long to process claims even after all documents had been forwarded to the department. Further, there were numerous cases of loss of documents and files and certain files were untraceable in the departments. LapFund (2017) reports that only 15 per cent of Kenyans have made plans for retirement, and a lot of people fall into poverty once they retire. An improvement in dissemination of information for processing of pension claims can play a major role in increasing the percentage of Kenya making plans for retirement. It is therefore important to investigate how mobile technology influence dissemination of information for processing of pension claims in the insurance industry.

Several studies have been conducted on mobile technological use in dissemination of information in East Africa and Kenya. For instance, Angello (2017) examined the role of ICT in accessing and disseminating information for improved urban livestock keeping in Tanzania.

Karanja (2018) studied the role of ICT in dissemination of information in secondary schools in Kenya; and Manyeki (2015) examined information and communication technology as a strategic approach in information dissemination at the Kenya Forest Research Institute.

However, mobile technological use in dissemination of information is limited to other sectors other than the insurance sector. This study therefore seeks to assess how mobile technology influence the dissemination of information for pension claims processing in Jubilee Insurance.

### **1.3 Purpose of study**

The purpose of the study is to examine the influence of mobile technology on dissemination of information for pension claims processing in Jubilee Insurance

### **1.4 Objectives of the Study**

The specific objectives of the study will be;

- i. To assess the influence of mobile applications on dissemination of information for pension claims processing in Jubilee Insurance
- ii. To determine the influence of text messages on dissemination of information for pension claims processing in Jubilee Insurance
- iii. To establish the influence of USSD on dissemination of information for pension claims processing in Jubilee Insurance
- iv. To establish the influence of voice calls on dissemination of information for pension claims processing in Jubilee Insurance

### **1.5 Research Questions**

The study seeks to answer the following research questions;

- i. What is the influence of mobile applications on dissemination of information for pension claims processing in Jubilee Insurance?
- ii. What is the influence of text messages on dissemination of information for pension claims processing in Jubilee Insurance?

- iii. What is the influence of USSD on dissemination of information for pension claims processing in Jubilee Insurance?
- iv. What is the influence of voice calls on dissemination of information for pension claims processing in Jubilee Insurance?

### **1.6 Significance of the Study**

The findings of this study will be of importance to the management of Jubilee Insurance and other insurance companies in Kenya, the government of Kenya and policy makers as well as other researchers, academicians and scholars. To the management of Jubilee Insurance, the study will provide information on how mobile technology influence dissemination of information for pension claims processing. This information can be used to develop strategies aimed at improving the development and utilization of mobile applications, text messages, unstructured supplementary service data and voice calls. To other insurance companies in Kenya, the study will provide information on how they can utilize mobile technology to improve dissemination of information for pension claims processing.

The role of pension schemes in the economy has increased with government policies promoting both public and private pension savings. Therefore, to the government of Kenya and policy makers the study provides information on the influence of mobile technology on dissemination of information for pension claims processing that can be used to develop policies to guide mobile technology. In addition, it is the responsibility of the government to protect stakeholders and ensure appropriate dissemination of information in pension schemes and hence the findings will provide information on how this can be achieved by utilizing mobile technology.

The study will add more information to the body of knowledge on how mobile technology influence dissemination of information for pension claims processing. To other scholars, academicians and researchers, the study provides information on mobile technology and dissemination of information for pension claims processing that can be used as research material and in the identification of research gaps. The study forms a basis upon which further studies can be conducted on mobile technology and dissemination of information for pension claims processing.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

This chapter presents a review of literature on mobile technology and how its influence on efficiency in processing of pension claims and specifically how utilization of mobile applications, text messages, USSD and voice calls influence dissemination of information for pension claims processing. It begins with theoretical review, followed by empirical review, conceptual framework and summary of the literature.

#### **2.2 Mobile Technology**

Mobile Technology utilization describes the changes associated with the application of mobile technology in all aspects of human society. Mobile technology adoption represents one of the most significant and current opportunities in the business environment to deliver growth and increase value across the whole organization. Akhusama and Moturi (2016) argue that mobile technology is being discussed at all levels and in many forms, and being able to understand the potential that the mobile technology represents, and then to create a plan to execute and deliver those benefits should be at the heart of any ambitious organizations business strategy.

Mobile technology progress in international economies to date has been varied in levels of understanding, success and execution (Kuciapski, 2017). Organizations in sectors such as financial services and online retail are leading the way, developing solutions that engage clients, staff and products or services into one efficient business process, securing customer engagement, maximizing revenues and providing a total view of the business operations and the organizations keys to success (Prashad, Saunders & Dalal, 2013). The public, as users of consumer and government services, are now expecting mobile technology by default options to be available for banking transactions, insurance transactions, pension claims, ordering goods or services and for sharing of information. This mobile technology expectation from the personal experience is naturally influencing those same users' expectations in the business environment as well.

### **2.3 Mobile Technology in Pension Business**

Less mature businesses need to learn from and recognize mobile technology success and transform their ways of working across the business (Naicker & Merwe, 2018). These changes, through improved dissemination of information, can develop more efficient business operations, with improvements in service delivery, excellence in collaboration across the business, enhanced and real time business knowledge and data availability, and unlock potential new ways of engaging with clients and markets (Aarabi & Bromideh, 2017).

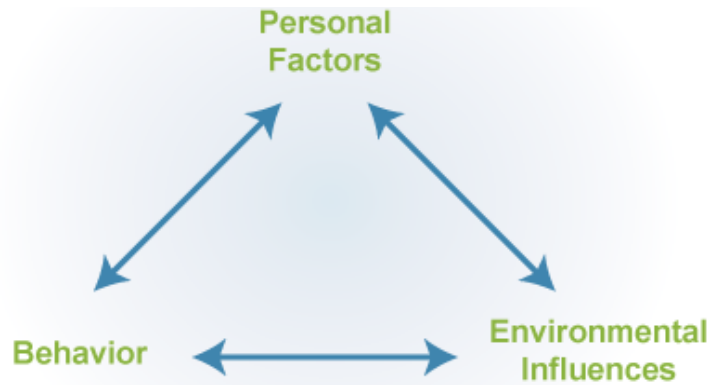
The use of mobile technology improves dissemination of information, business processes and decision making. It involves migrating to infrastructure on demand (cloud) to decrease labor and increase scalability (Ensouri & Tareg, 2016). It also encompasses using inbound and outbound micro-targeted marketing software and techniques combined with analytics to improve demand driven communications with participants. According to Holzheu, Trauth and Birkmaier (2016), mobile applications can be leveraged to process transactions faster compared to paper processing and have a digital dashboard of all pension in one place. Concepts of gamification can also be used to get millennial and other young people think about retirement and plan for it. In improving efficiency acceleration away from “high touch” transactions such as face-to-face, telephone, and mail towards a preference for mobile transactions – while simultaneously improving access, availability, and consumption of highly personalized information. In addition, the use of USSD and voice calls improve dissemination of information and efficiency in business processes involving pension claims (Marire, 2018).

### **2.4 Theoretical Review**

Traditionally, information dissemination has been treated as a one-way transaction, where information was transferred to a passive recipient through information dissemination channels. Dissemination was perceived as a linear, mechanical process of “transfer”, in which knowledge is packaged and moved from one “place” to another, much as an appliance might be packaged and shipped. This study proposes that information dissemination is a two-way process which involves effective and efficient interactions between the information provider and the receiver. Therefore, the study will be anchored on two theories: social cognitive theory and information dissemination theory.

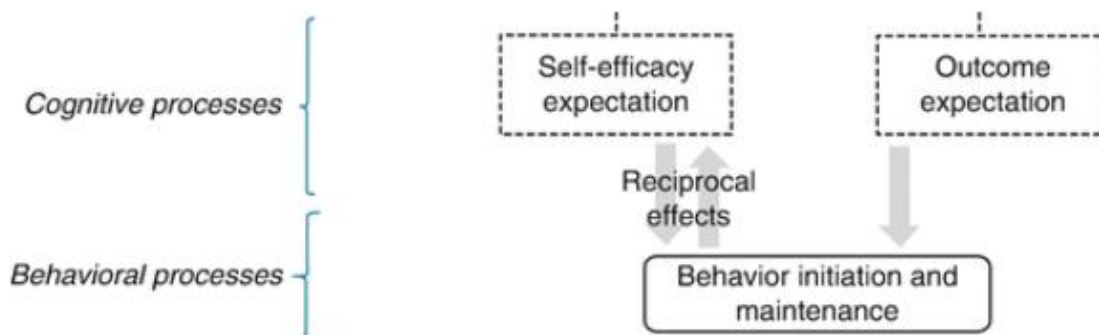
### 2.4.1 Social Cognitive Theory (SCT)

This theory was originally proposed by Bandura, 1986. It is a widely accepted theory that provides a critical perspective for examining the reasons why individuals adopt certain attitudes. In SCT theory, behaviour, personal and environment factors interact to determine individual behaviour (Wood & Bandura, 1989). These three elements influence each other.



Previous research has demonstrated the use of SCT in various domains such as organizational management, health, and education. In health, this theory has been used to predict lifestyle behaviour for the prevention of osteoporosis (Lever-Landis, 2003). In information technology, SCT has been applied to study loyalty in online communities (Lin, 2010). However, in dissemination of information context there is a lack of research examining individual behaviours in accessing information. Thus, SCT is an appropriate theory to examine the reasons why individuals adopt certain attitudes after retirement.

According to SCT, two concepts are relevant in examining individual behaviour, namely, self-efficacy and outcome expectations, including personal outcome expectations and community outcome expectations.



## **Self-Efficacy**

Bandura (1986) defines self-efficacy as an individual's considerations of their ability to plan and execute actions and tasks. In other words, self-efficacy refers to the individual's belief in their ability to do certain actions. It also involves the individual's self-evaluation regarding their actions, efforts, and diligence in making decisions (Lin, Huang & Chen, 2009).

Self-efficacy has been found to positively affect the individual's decision to execute certain tasks (Bandura, 1982, 1986; Igbaria & Livari, 1995). An individual with high self-efficacy will feel confident in doing a task, compared to those with low self-efficacy. Individuals with low self-efficacy believe they are not able to perform the task or action (Schunk, 1990).

Previous studies have shown that self-efficacy affects human attitudes positively when accessing information (Bock & Kim, 2002; Hsu, Ju, Yen & Chang, 2007; Tamjidyamcholo, Bin Baba, Tamjid & Gholipour, 2013; Wasko & Faraj, 2005). For instance, Constant, Kiesler and Sproull (1994) found that when a sender gives accurate and meaningful information, it increases their confidence level and promotes positive information-accessing behavior. Self-efficacy is considered as one of the main motivations for individuals to access information (Bock & Kim, 2002).

## **Outcome Expectations**

Social cognitive theory posits that an individual's behaviour is influenced by the outcome they expect from conducting a task or action. Bandura (1997) defines an individual's outcome expectation as the individual's belief that they might receive certain benefits from carrying out a certain task. In the information-sharing context, individual outcome expectations can be categorized as personal outcome expectations and community outcome expectations (Bock and Kim, 2002; Compeau, Higgins & Huff, 1999; Kankanhalli, Tan & Wei, 2005).

Personal outcome expectations refer to individuals' beliefs that by accessing information they might achieve certain tangible rewards or goals (Bock & Kim, 2002; Compeau & Higgins, 1995, 1999; Kankanhalli, 2005; Wasko & Faraj, 2005). For instance, an individual is motivated to share information when they believe there will be an act of reciprocity (Hsu, 2007).



An act of reciprocity is important because the individual believes that accessing information might lead to others helping him/her in the future (Bock & Kim, 2002; Davenport and Prusak, 1998; Lu & Yang, 2011; Paton, 2003). Community outcome expectations refer to the individual's belief that they might achieve internal satisfaction from helping others who require their information (Kankanhalli, 2005).

In the context of the present study, social cognitive theory is used to explain the need for mobile technology in information dissemination. The relationship between clients and the insurance companies considerably depends on exchange of information and transactions. Mobile technology improves exchange of information between departments in an insurance company and between insurance companies and clients. The use of mobile technology also reduces the cost of dissemination of information and the time it takes to transfer information.

#### **2.4.2 Information Dissemination Theory**

Information dissemination theory was developed by Lee and Ventura in 1999. The theory indicates that dissemination of information means broadcasting a message to the public without direct feedback from the audience (Lee & Ventura, 1999). Dissemination takes on the theory of the traditional view of communication, which involves a sender and receiver. The traditional communication viewpoint is broken down into a sender sending information, and receiver collecting the information processing it and sending information back, like a telephone line (Wei, Bu & Gollagher, 2014).

With dissemination, only half of communication model theory is applied. The information is sent out and received, but no reply is given. The message carrier sends out information, not to one individual, but many in a broadcasting system (Moorefield-Lang, 2017). An example of this transmission of information is in fields of advertising, public announcements and speeches. Another way to look at dissemination is that of which it derives from the Latin roots, the scattering of seeds. These seeds are metaphors for voice or words: to spread voice, words, and opinion to an audience (Shan, Liu & Xu, 2017).

There are five major elements for effective dissemination: source, content, medium, user and destination. Source refers to the agency, organisation, or individual responsible for creating the new knowledge or product, and/or for conducting dissemination activities.

Content is the new knowledge or product itself, as well as any supporting information or materials. Medium refers to the ways in which the knowledge or product is described, “packaged,” and transmitted. User or intended user, is the relevance of the information or product to be disseminated and user skills; and destination is the desired outcome of the message (an attitude change or a new behaviour) (Moyle, Croy & Weiler, 2010).

This theory reveals the complex nature of the process of effective information dissemination. It highlights the fact that when someone is developing an information dissemination strategy, she/he needs to consider the journey of a message from source to destination, and each input is important (Wei, Bu & Gollagher, 2014). A well-designed message will have no impact, for example, if transmitted via the wrong channel. A message will not be effective if the user does not have information literacy skills to access it. Moreover, there is need to understand what inspires behavior change.

This study will use the Information dissemination theory to examine and explain the use of mobile technology such as mobile applications, text messages, USSD and voice calls in information dissemination. Unlike the traditional methods of information dissemination, mobile technology efficiently and accurately disseminate information to the target audience. Jubilee Insurance used mobile applications, text messages, USSD and voice calls to disseminate information to their clients .

## **2.5 Empirical Review**

This section presents an empirical review on the effect of mobile applications, short message services, USSD and voice calls on dissemination of information for pension claims processing.

### **2.5.1 Mobile Applications**

In Pakistan, Butt and Rehman (2016) conducted a study on the development of information dissemination platform by integrating web and android technologies. A multi-method technique was employed by combining surveys with experiment. A pre-experiment survey was conducted with the university students for need analysis and also to generate themes for the designed application. The post-experiment survey was employed to evaluate the usability of the developed application.

By using both technologies, the proposed platform complements the limitation of individual technology and help users to have access to these technologies. The study found that delayed information about opening and closing dates of admission in different universities made students either to enroll in an institution which was not their first preference or failed to secure admission at all. From the findings, it was revealed that the benefit of using RSS feed was that same information was available on website and mobile application. This reduced the chances of inconsistencies in both applications. The system also provided the facility of map to locate university campuses. The map was connected through Google API v2. In mobile application, data was stored in mobile local database using SQLite database tool.

Njuguna (2016) found that Ushahidi, developed in Kenya, is another example of an m-ARD app delivering qualitative benefits. It uses crowdsourcing to acquire information about events in an area and superimposes the results onto maps. It was initially used to monitor post-election violence, and its main benefit has been providing accurate information about what is happening on the ground and increasing government transparency. Ushahidi is also used to support timely interventions and aid government agencies in disaster-hit areas, such as in Haiti after its disastrous 2010 earthquake. Ushahidi provides a platform for organizations to receive information, analyze it, and form a response. It is provided on an open source basis to a wide range of public and private agencies, including new ones—how the information is used and acted on is not Ushahidi's responsibility.

In Kenya, Ochilo *et al.* (2019) examined the ease of use and factors impacting user acceptance and behavior when interacting with an app for agricultural extension in Kenya. Results show factors including gender and age play a role in the adoption of technology by agricultural extension agents. The findings have useful lessons for apps' development in the agricultural sector and suggest that including intended users of an app in the design process significantly increases usability. In Tanzania, mobile phones facilitate access to electricity by off-grid homes. Through M-KOPA, users can pay for affordable, high-quality solar energy via a mobile installment plan. According to Kalemli-Ozcan and Sorenson, (2016), in Kenya, over two-thirds of the adult population use M-Pesa—a system for payments over mobile phones—for transferring money, paying bills, and making online purchases.

In Ghana, Esoko (a mobile communication platform) informs farmers about market prices and links them with potential buyers (Etwire *et al.*, 2017). In Uganda, UReport, a free text message-based platform, empowers weaker social groups, enabling them to have a voice (Zamfir, 2015).

Park, Stanko and McShane (2019) revealed that M-apps such as M-PESA in Kenya, SMART Money and G-Cash in the Philippines have attained widespread trust and acceptance among rural populations as safe, easy ways of making and receiving payments and storing money. Banks and businesses also recognize these m-ARD apps as efficient means of administering payments and money transfers. And, in these countries at least, m-money is increasingly accepted by banks as a legitimate platform to pay for agricultural inputs and outputs.

In Sweden, the use of mobile phone applications such as social media (Twitter, Facebook) as a tool for community policing allows residents to engage in daily police work. This technology has spread from large cities to police forces in rural areas and has been used by citizens as a way to share local information about their safety with law enforcement agencies (Ceccato & Dolmen, 2013). In South Africa, Dlodlo (2015), observed that, the police major tasks was to reduce crime levels on year to year basis. In pursuance to this, they have used internet in ensuring community safety and to facilitate the process of finding solutions to crime.

Masuki *et al.* (2010) conducted a study on the role of mobile phones in improving communication and information delivery for agricultural development in Uganda. Research findings showed that use of phone was appreciated by rural communities as easy, fast and convenient way to communicate and get prompt answers of respective problems. Farmers were more excited about the use of phone than other information and communication technologies. Use of mobile phones to access information differed from one farmer to another. There is generally more use of phones by male than female farmers, yet more female farmers requested information as compared to male farmers. Despite some obvious challenges, the use of phone in the study area was accompanied by positive outcomes and opened opportunities of collective action among social groups with farmers coming together to market their produce.

The de Silva and Ratnadiwakara (2018) study also found that Gherkin farmers in Sri Lanka were able to improve their incomes through simple mobile phone applications that helped reduce waste through a feedback system. The study found that up to 40 per cent of crop loss

could be prevented with quick interventions facilitated by information received via SMS. Farmers also expressed their willingness to pay for such services if it would save their time and money. Mobile phone usage by farmers reduced the information search costs, thereby dramatically lowering transaction costs and enabling greater farmer participation in commercial agriculture. Suarez and Suarez (2013) studied the impact of mobile phone apps in the agricultural production in Colombia and found that the importance of the application of the mobile phone operation favored the exchange of products and the sale of these thus succeeding in an increment in earnings. Shaikh (2017) studied the impact of mobile application in agriculture by assessing the attitude of farmers towards the usage and the problem in accessing the mobile apps.

The tech companies and the government are taking effort to develop many mobile applications for farmers in India to help farmers in different ways and provide assistance through mobile application in different field of agriculture. There are various applications available in the field of agriculture across different mobile platform (App Store and Google Play Store). The mobile application provide the farmers with data on weather condition, market rate and trends, insurance of crops, agricultural news, financial services, price of commodities and Geospatial application.

iCow is one of the mobile applications used to improve the dairy sector in Kenya. This application is accessed by farmers through their mobile phones or the internet. The application came first in the Apps4Africa competition because of its innovative approach revolutionizing the interaction with small-scale farmers. Farmers using iCow increase milk productivity, incomes, poultry, eggs, crops, soil fertility as well as reduced livestock mortality. In addition they share their iCow messages and teach their farmer groups and communities. Marwa, Mburu, Oburu and Mwai (2020) studied the Impact of iCow Service on dairy production and household welfare. This study employed the propensity score matching approach to evaluate the impacts of ICT-based extension services, in this case, iCow services on milk production, milk income, and household income using cross-sectional data from a survey of dairy farmers in Uasin Gishu, Nyandarua and Bomet counties of Kenya. The use of ICT-based iCow services is shown to increase annual milk production per cow, milk income, and household income by 13%, 29%, and 22%, respectively.

Mobile applications have been used to improve the agricultural sector. For instance, the Sygenta Foundation established Kilimo Salama (Swahili for safe agriculture), a program aimed to support smallholder farmers in dealing with weather risks by developing and piloting agricultural micro insurance products (Webb, 2010). This project was done in partnership with Sygenta Foundation for Sustainable Agriculture, UAP Insurance and Safaricom Ltd. Murray (2010) reported on the impact of mobile technology on farmers through the Kenya Farmers Helpline. From the call center, agricultural experts talk to farmers from across the country, addressing various issues regarding agriculture. Using a mobile phone, pastoralists and cattle traders in Kenya can access market trends from the National Livestock Marketing Information System (NLMIS) run by the ministry of livestock.

### **2.5.2 Short Message Services**

In United Kingdom, Wong, Jones and Rubin (2017) conducted a study on the influence of mobile text alerts on communication of emergency information to adolescents. Qualitative interviews were conducted with participants aged 12–18 years. Participants discussed scenarios relating to flooding and the discovery of an unexploded World War Two bomb and were shown example alerts that might be sent out in these circumstances. Intended compliance with the alerts was high. Participants noted that compliance would be more likely if: they were familiar with the system; the messages were sent by a trusted source; messages were reserved for serious incidents; multiple messages were sent; messages were kept short and formal. Several expressed concern that they could miss an alert entirely; depending on contextual factors such as whether they were at school where phones may be banned, at home with their phone left in their bedroom, or out of range of a mobile phone signal. A text alert system should only be used in conjunction with other methods of communication to ensure that messages reach as many people as possible.

Mahan, *et al.* (2019) conducted a study on the influence of short message service on information dissemination in Pakistan. The study adopted a cross-sectional survey design. The study found that one attractive feature of mobile phone networks for emergency communication is the ability to target messages to all phones in a specific location. Such location-based messages can use the traditional short messaging service (SMS) or cell broadcast capability. Cell broadcast allows text messages to be sent to all phones that are

connected to a base station within a specific geographic area. Cell broadcasting is reliable for use during emergencies as it operates on a separate frequency channel/network from the frequencies used for phone calls and radio communications.

Dash and Gladwin (2017) found that successful emergency communication is determined not just by how quickly or reliably a message can be disseminated, but also by how people respond to the information that they receive. They revealed that a system based on sending emergency messages via mobile phone text message would be generally well accepted by the public and likely to improve uptake of protective behavior when combined with other approaches.

Mileti and Peek, (2010) found that people go through the sequential processes of perceiving (hearing or receiving the information), understanding (“attachment of meaning” to the information), believing (belief in the information and the accuracy of it) and personalizing (perception of risk to themselves) emergency information, which culminates in their response. Although emergency information broadcasted via mobile phone networks tends to be highly perceptible due to its reach and reliability the extent to which it is easy to understand, believe and personalize is less clear. In New Zealand, Zhang, Gao, Wang and Yang (2007) studied the design of an agricultural SMS system based on a GSM modem. Although the agricultural SMS system based on a GSM modem can be quickly adapted to some small rural areas, the long-term goal is to provide all rural areas with a full information service. The strength of the system lies in the ease with which large messages should be able to be received and sent. Limited user testing so far indicates that as the SMS system develop, its use will expand very significantly in rural areas.

In an exploration of farmers’ intentions to adopt mobile Short Message Service (SMS) for citizen science in agriculture, Beza, Reidsma and Melisew (2018) found that while more advanced technologies are available, to reach smallholder farmers, simple technologies such as mobile SMS are needed. However, the intentions to adopt mobile SMS technology for agricultural data provision are predicted by the perceived usefulness of the technology (performance expectancy), the effort needed to use the technology (effort expectancy), the cost of using the technology (price value) and the trustworthiness of the organizing body. Short Message Service (SMS) is widely used in the agricultural sector in Africa. Farmers can interact with experts and systems via SMS to receive weather updates and information on best practices

on various sectors of agriculture (Lung'ahi, 2014). In Rwanda, the eSoko project was launched in 2009 to allow farmers to access prices of different agricultural commodities via SMS. An SMS service that brings information on demand and supply to farmers and extension workers has been developed in Uganda.

In Ghana, Dansieh (2011) conducted a study on the influence of SMS texting and its potential impacts on students' written communication skills. Using the survey method, the article examines how pervasive the use of SMS texting is among polytechnic students; its possible effects on students' writing skills; and, what lecturers and students themselves think about the phenomenon. Based on responses from survey participants, the article argues that even though mobile phones are handy tools for harnessing and disseminating information, they could have their dark side too: the SMS text messaging function could heighten the tendency among students to adopt non-standard uses and contracted forms of English words in their classwork, examinations and research reports especially in an academic environment. In Kenya, Lung'ahi (2014) conducted a study on effectiveness of mobile telephony SMS (Soko+ SMS Service) in agriculture extension information in Sipili Olmoran Ward in Laikipia county using a descriptive research design. The results indicated that access to mobile phone, provision of relevant information, trainings, competition among information providers are critical factors for the uptake of mobile telephony SMS (Soko+ SMS Service) agriculture extension information among small scale farmers.

Makau, Vanleeuwen, Gitau, McKenna and Muraya (2018) studied the effectiveness of using cellphone technology as a dairy management training tool for smallholder dairy farms in Kenya. Using an online short message service interface, short messages on management practices were sent daily, for 3 months, to the phones owned by the farmers in the intervention group. Post-intervention assessment of dairy management knowledge and attitudes related to the messages was done 3 weeks post-intervention. Translation of message content to the local language and using easily understandable terminology were reported to be helpful for better understanding and motivation of farmers to implement recommendations. Cellphone technology with a short message service interface can be an effective training tool for SDFs (Small Scale Dairy Farmers) in remote areas of Kenya located far from where seminars are conducted for dairy farmers.



### **2.5.3 Unstructured Supplementary Service Data (USSD)**

USSD is the most popular available communications technology to deliver mobile financial services to the Bottom of the Pyramid (BoP). It is used by large-scale companies such as Tigo, Safaricom Mpesa in Kenya, EcoCash in Zimbabwe, bKash in Bangladesh, Wing in Cambodia, and EasyPaisa in Pakistan. The Kenyan startup LittleCab allows ordering a taxi through USSD, and in Egypt, RDC, Mali, Cameroon and Senegal, Orange has developed a personalized store (Ndour & Gueye, 2016). USSD demonstrates that a simple technology, adapted to the reality of the BoP's digital usage, has the undeniable advantage to be used by anyone. It provides fundamental services and new communication channels for businesses, which are the basis for unleashing the continent's entrepreneurial and economic potential.

In South Africa, Katherine and Alexander (2016) conducted a study on innovative use of cellphone technology for HIV/AIDS behavior change communications. The study concluded that USSD was not well-suited for the delivery of 'narrative' content, but should rather be used for providing menus that allow users to 'drill down' to content they want (for instance the TAC's information directory<sup>15</sup> or the commercial 'Look4it'<sup>16</sup> service). The study indicated that the issue of fails needs to be further explored to ascertain whether it is due to the service provider currently hosting the USSD, or if it is a widespread problem with USSD. Given that USSD is session based and the information disappears from the user's phone once the session is over, cross-over to other channels (e.g. sending the user an SMS with the content they have requested) should be explored to increase USSD's utility.

In Zambia, Lovemore and Phiri (2017) on their study on enhancing the administration of national examinations using mobile cloud technologies collected data from 80 respondents consisting of teachers, parents and students whose analytical results show that current business processes have a number of irregularities that subsequently result in candidates' registration records missing or being incorrect as well as delayed access to examinations results by candidates. The proposed SMS/USSD application was tested and proved to be faster and more reliable than the traditional computer based approach that is currently being utilized. The study also revealed that in many schools, some candidates have failed to sit the national examinations as a result of irregularities in the current system.

During the study, the business process based on the current system was developed and this assisted the researcher to develop a model of the proposed system. Almost all the respondents during the study indicated that they possess and know how to use a mobile phone. About 95% of the respondents recommended the introduction of the proposed system in order to curb the challenges currently experienced. From the results gotten, it is clearly seen that a web based system integrated with SMS or USSD can provide a more convenient and robust method of registering students as well as disseminating examinations results.

Kante, Oboko and Chepken (2016) conducted a study on factors affecting the use of ICTs on agricultural input information by farmers in developing countries. The study found that TigoKilimo is an agricultural value added service (Agri VAS), operated by the mobile network operator Tigo in Tanzania. The service offers relevant, timely and actionable information via mobile phones to farmers in Tanzania across three domains: agronomic practices on major crops, market price information, and weather forecasts. Findings revealed that content can be accessed via three mobile channels: Unstructured Supplementary Service Data (USSD), Interactive Voice Response (IVR) and helpline. And as a result, 88% of respondents who reported making changes based on TigoKilimo information also reported accruing benefits from using TigoKilimo information. The benefits included better crop yields (45%), more knowledge about farming practices (37%), and greater ability to predict the weather to plan farming activities (23%).

Munene and Kasamani (2018) conducted a study on the influence of USSD on dissemination of information of tea farming in Kenya. A case study strategy was employed to gain a rich understanding of the research perspective with the focus being the tea farmers of Mungania Tea Factory Company Limited. Through qualitative and quantitative analysis, the research findings were generalized to all the tea farmers. Agile system development methodology was employed due to its sustainable development having testing integrated throughout the lifecycle. The contribution of this research concerns adoption of a tea farming information system to improve on productivity, service delivery, profitability, decision-making and farmer protection from fraud and losses. Moreover, it facilitates the communication between the factory and the farmers giving easier access to extension services. It further enhances processing of more accurate and comprehensive information and generation of useful reports.

The study indicated that challenges that keep many small scale farmers locked in poverty, stem from a lack of access to market information, technical knowledge, inputs, financing and accessible markets where they can sell their products.

United States Agency for International Development (2015) conducted an assessment of Airtel Kilimo that uses USSD. Airtel subscribers (both prepaid and post-paid) can register for the service via USSD on their mobile phones by dialing '\*760#'. During registration, clients are asked to provide the details of their gender, location (county level), crop of interest, and preferred language (as the service is available in Kiswahili and English). Once successfully registered, users receive an SMS confirmation and are able to navigate the USSD menu to subscribe to the content categories of choice. For example, a user could select to receive tips on maize and passion fruit, as well as weather updates. The user receives an SMS reminder to notify them that new content is available and can be accessed by dialing '\*760#' and viewing 'messages' in the chat menu.

#### **2.5.4 Voice Calls**

A study by Abraham (2007), which looked at Kerala fishermen, found that widespread use of mobile phones increased the efficiency of markets by decreasing risk and uncertainty, although it noted that realizing potential efficiencies depended on easy access to capital. Using mobile phones at sea, fishermen are able to respond quickly to market demand and prevent wastage from the catch - a common occurrence before the adoption of phones. Mobile phones help coordinate supply and demand, enabling traders and transporters to take advantage of the free flow of price information by catering to demand in undersupplied markets.

Etwire *et al.* (2017) carried out an assessment of voice call-based dissemination of weather and market information in the Upper West Region of Ghana that contact with agricultural extension agents and farmer-to-farmer extension services significantly influences farmers' decision to patronize mobile phone-based weather and market information. Regardless of sex, income status, and age group, farmers generally rate mobile phone-based weather and market information as very useful. The study identified inexact information, complex text messages, information that are too costly to implement, and poor infrastructure as the constraints to the utilization of mobile phone-based weather and market information.

Tegegn and Dafisa (2017) reviewed on potential of voice call usage in agricultural information dissemination in Ethiopia. Main factors that influence the use of mobile phone as: high cost of available technologies, inadequate infrastructure and low ICT skills, poor and expensive connectivity, inappropriate ICT policies, language barriers, low bandwidth, inadequate and/or inappropriate credit facilities and systems. The ministry of agriculture when designing strategies for effective and efficient use of mobile phone for disseminating agricultural information, they have to consider those identified factors of mobile phone usage.

In Nigeria, Egbule, Agwu and Uzokwe (2014) conducted a study that assessed the availability and dissemination of information to farmers using voice by public extension agents in Delta state, Nigeria. Data was collected from 64 randomly selected public extension agents from three agricultural zones in the state. Majority (98.4%) of the extension agents were not provided with institutional mobile phones to aid information dissemination to clientele. However, about 97% of the respondents affirmed that they possess personal mobile phones, which they (92%) use to disseminate information to farmers. Interactions with farmers were mainly through phone calls (84.4%) and short message services (SMSs) (71.9%). Mobile phones were frequently used in disseminating information on availability of new crop varieties and available markets for sale of crop produce. The study points to the need for the public extension service to collaborate with network providers in dissemination of short programmed messages or calls that are beneficial to the farmers as well as creating a hotline desk that will readily provide answers to the immediate needs of farmers.

Yasmin (2016) conducted a study on the influence of voice call on dissemination of information in the health sector in Pakistan. Patients were contacted by interactive voice calls as a reminder, and reasons for missed appointments were also recorded. The study further revealed that patients were getting calls for attending scheduled visits and were welcome to ask questions concerning treatment and other health related issues. The study also found that mostly, the messages consisted of simple reminders to take medicine, follow physician's advice on diet or other life style changes activities and attend clinic/hospital on time, but a few messages were customized according to the patients' clinical needs.

Ganesan, Umadikar and Prashant (2015) conducted a study on the assessment of mobile voice agricultural messages given to farmers of cauvery Delta Zone of Tamil Nadu, India. The study found that mobile voice messages are an effective communication channel for disseminating agricultural production technology information to the farmers. The findings revealed that the majority of the farmers who listened to the agricultural information delivered through mobile voice messages were male and were within the active productive ages of 36 to 45 years. It was observed that almost all the farmers were very satisfied with the mobile voice messages as they had effective audio quality and comprehensible content of agricultural information. Further, the language used to relay the information in the voice message was very simple and easy to understand by the farmers.

Hudson (2018) examined interactivity, awareness, and adoption of mobile phones' voice calls on agricultural innovation in Africa. The findings indicated that participatory radio campaigns used both community listening groups and mobile phones to engage farmers. In a fifteen-month project in four countries, farmers who participated interactively learned more and were significantly more likely to adopt at least one of the practices discussed in the radio campaigns than farmers who listened without interactivity and farmers who did not hear the programs. In a second project, 15 radio stations in four countries used the participatory method to encourage farmers to plant and consume orange sweet potatoes to overcome Vitamin A deficiency. Again, farmers who listened and engaged interactively were significantly more likely to grow and consume the potatoes than passive listeners and non-listeners. In Uganda, a project called "Her Voice on Air" used similar techniques, paying particular attention to the information needs of female farmers and engaging them in listening groups and interaction.

Mwalupaso (2019) conducted a study on understanding the purpose and potential popularity of mobile phone use in Zambia's maize production. As a platform for accessing information through voice calls, farmers are able to collect agricultural information which may lead to higher productivity due to technology spillover. If the use of mobile phones contributes to the improvement of farmers' productivity, their agricultural output level should increase. The study found the use of mobile phones significantly increases farmers' productivity, by about 30%.

If farmers start to adopt mobile phones to collect agricultural information, the total maize output would also increase by 30.36%, which would culminate in feeding two more people per household daily for the whole year.

Mugwimi (2015) conducted an evaluation of the role of mobile phone communication in accessing market information by horticultural farmers in Kirinyaga County, Kenya. The results showed that only one fifth of the farmers used mobile phones to access market information. Most farmers used mobile phones mostly to communicate with friends and relatives. Among other communication channels used, middlemen were used to a very great extent, followed by fellow farmers to a moderate extent. Therefore, the use of mobile voice calls has a significant influence on accessing market information.

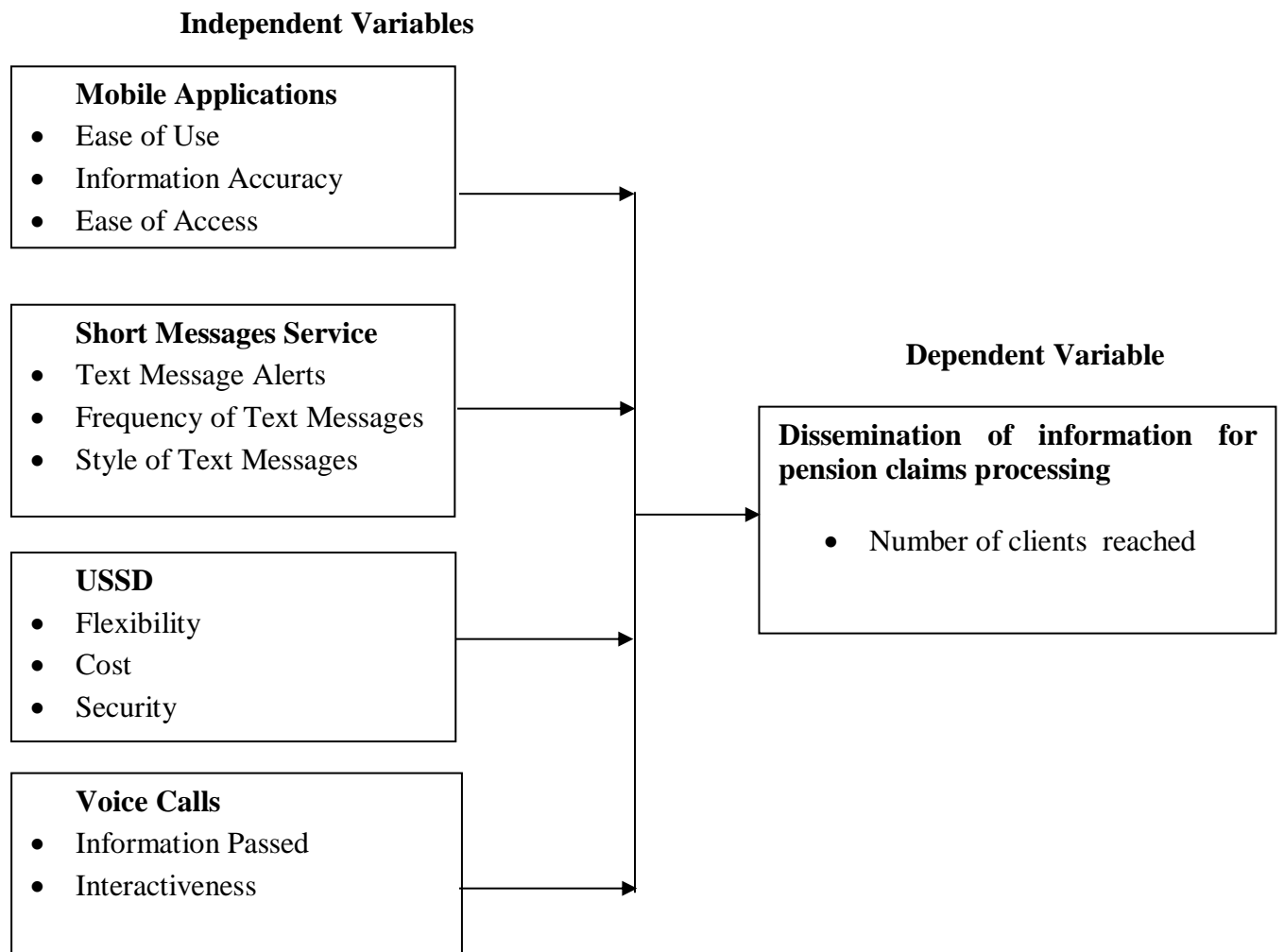
## **2.6 Conceptual Framework**

Conceptual framework involves forming ideas about relationships between variables in the study and showing these relationships graphically or diagrammatically. A conceptual framework represents the researcher's synthesis of literature on how to explain a phenomenon (Wilson, 2010).

A conceptual framework maps out the actions required in the course of the study given the previous knowledge of other researchers' point of view and their observations on the subject of research.

The independent variables include mobile applications, text messages, USSD and voice calls. The dependent variable will be dissemination of information for pension claims processing in Jubilee Insurance.

Figure 2.1 shows the hypothesized relationships between the independent variables and the dependent variable.



**Figure 2. 1: Conceptual Framework**

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

Research methodology refers to a general strategy of research that explains ways of undertaking research, in other words, it identifies various methods that can be employed in research. The methods describe particular techniques or procedures and means or modes of data collection used to select, identify, process, and finally analyze information concerning a topic (Yevale, 2016). This chapter highlights methods which were used by the researcher in performing the study. It involves research design, study population, sample size and sampling method, instruments of collecting data, procedure of data collection and instruments, data analysis and ethical considerations.

#### **3.2 Research Design**

A research design refers to a framework of techniques and methods selected by an examiner that incorporates different research elements in a logical and reasonable way so as to efficiently handle research problem (Babbie, 2017). Research design is a collection of procedures and methods employed in gathering as well as analyzing variables' measures that are stated in a research problem. This study deployed descriptive study design as it assists obtain answers to questions of what, who, where, when and how a phenomenon is related with a specific problem of research (Yevale, 2016). Descriptive research was further deployed to generate information about recent status of a phenomenon to explain "what exists" in regard to conditions or variables in a certain situation. Descriptive research concerns statement as they appear at the present time where the researcher has no power over variable (Swanborn, 2009). This study deployed descriptive study design as it offers a chance to integrate quantitative and qualitative methods of collecting data. Moreover, descriptive research designs are cost efficient and less time-consuming than experimental studies.

#### **3.3 Target Population**

Target population refers to a certain population group that share similar features and are recognized as intended audience for research (Wilson, 2010). This refers to a group of individuals who possess particular characteristics that can be categorized appropriately in order



to split them from entire population. This research was conducted in Jubilee Insurance. Target population were pensioners who utilized mobile applications, short message services, USSD and voice calls for pension claims processing for a period of twelve months. They were selected from a population of 561 pensioners within the Jubilee database (Jubilee Insurance (2019)). Others were heads of pension business, finance, legal services, internal audit, operations, information and communication technology, actuary, business development and strategy and business development departments. The target population was therefore the 561 pensioners in Jubilee Insurance and 8 heads of departments.

### 3.4 Sample Size and Sampling techniques

According to (Saunders, Lewis & Thornhill, 2012), determination of sample size refers to a process of choosing the number of replicates and observations to integrate in a statistical sample. Sample size in any empirical study is a significant attribute where its aim is to create inferences concerning a population obtained from a sample. The sample size in this study was established by use of Krejcie and Morgan sample size determination formula (Singpurwalla, 2013). A representative sample was acquired by use of this formula. Since the number of heads of departments is small, they were not be sampled.

$$n = \frac{x^2NP(1 - P)}{(ME^2(N - 1)) + (x^2P(1 - P))}$$

Where:

n=sample size

$x^2$ =Chi-square for the specified confidence level at 1 degree of freedom

N=Population size

P = is the proportion in the target population estimated to have characteristics being studied. As the proportion was unknown, 0.5 was used. Bryman and Cramer (2012) indicate that the use of 0.5 provides the maximum sample size and hence it is the most preferable.

ME=desired margin of Error (Expressed as a proportion)

$$n = \frac{1.96^2 561 * 0.5 * 0.5}{(0.05^2 * 561) + (1.96^2 * 0.5 * 0.5)}$$

$$n = 288$$

This research study employed systematic sampling method to choose pensioners from list of pensioners in Jubilee Insurance. Systematic sampling refers to a statistical technique that entails elements selection from a structured sampling frame. Sampling begins by choosing at random an element from a list and then each  $K^{\text{th}}$  component in a frame is taken, whereby  $k$ , is a sampling interval (Kothari, 2012). From the list of pensioners in Jubilee Insurance, the first member was selected and every 2<sup>nd</sup> member until a sample of 288 was achieved. An advantage of using systematic random sampling technique is an assurance that population in a study is sampled evenly.

### **3.5 Data Collection Instruments**

This survey deployed primary data and also secondary data. In this investigation, primary data was attained using semi-structured questionnaires as well as key informant interviews. Secondary data on other hand was retrieved from yearly reports of Jubilee Insurance. Semi-structured questionnaire refers to a collection of questions that are structured and unstructured (Singpurwalla, 2013). Some of the questions and their sequence are determined in advance (closed ended questions), while others are not determined in advance (open ended questions). Structured questions are planned and created in advance, which means that all respondents are asked equivalent questions and in sequence order (Saunders, Lewis & Thornhill, 2012). Unstructured questions, which are also known as open-ended questions, produce a higher cognitive load in the sense that the respondent has to hardly think to come up with an answer (Russell, 2013). This can result to a lower rate of response and at times lower quality of data. On the other hand, they generate rich insights that provide depth and color to the black and white of structured questions. Questionnaires were used in this study because they enable an investigator to gather information from a big audience. Other than being cheap, questionnaires are a practical way of collecting data. In addition, questionnaires are one of the most reliable way in collecting quantitative data (Guthrie, 2010).

Key informant interview guide was deployed to gather data on key informants who include heads of departments like pension business, finance, legal services, internal audit, operations, information and communication technology, actuary, business development and strategy and business development. Creswell (2014) indicates that key informant interviews are in-depth qualitative interviews with persons who are aware of what is taking place within a community.

### **3.6 Reliability and Validity of the Research Instrument**

Research tools pre-testing took place in the pensions department. Questionnaire pretesting assists in establishing questionnaire strengths as well as weaknesses. Furthermore, pretesting is deployed to evaluate clarity of questionnaire and suitability to respondents. Pre-test was randomly sampled and included 10% of sample size. Guthrie (2010), suggest that 10 percent of sample needed for complete investigation must be utilized in the sample size.

#### **3.6.1 Validity of Research Instruments**

Validity refers to degree on which an instrument precisely measures all what it intends to measure. This research used two types of validity that is content validity and face validity. According to Collis and Hussey (2014), content validity reveals the degree to which items sufficiently represent or measure property content or feature that a researcher plans to measure. It is the degree upon which items in research instrument signifies content universe on which an instrument may be generalized. In addition, content validity in this study was improved by arranging questionnaire questions as per the study objectives and indicators.

Face validity refers to a subjective judgment on a construct operationalization. Face validity refers to extent on which a measure seems to be associated to a particular construct (Greenfield & Greener, 2016). When test content simply appears to be relevant to an individual carrying out the test then the test has face validity. It examines questionnaire appearance in terms of readability, feasibility, style consistency, formatting, and language clarity. In this study, face validity in this investigation was enhanced by using reviews from experts in field as well as the supervisor.

### 3.6.1 Reliability of Research Instruments

Reliability is defined as the degree to which instrument in research produces similar results. The most common reliability measure in research instruments is internal consistency (Creswell, 2014). Reliability of internal consistency depends on consistency of the score of personal items on the instrument, with scores of set subscale or items, which usually comprise of various items in order to measure one construct. One of common techniques for examining reliability of internal consistency is Cronbach's alpha. Cronbach's alpha or coefficient alpha is employed to evaluate internal consistency of an item. If alpha value is 0.70 or beyond, research instrument is termed as reliable. In this study a Cronbach's alpha of 0.7 was used.

**Table 3. 1: Reliability Statistics**

	<b>Cronbach's Alpha</b>	<b>N of Items</b>
Dissemination of Information	0.877	3
Mobile Applications	0.965	7
Text Messages	0.862	8
USSD	0.780	9
Voice calls	0.861	6

According to the findings, dissemination of information had a Cronbach's alpha of 0.877, mobile application had a Cronbach alpha of 0.965, text messages had a Cronbach's alpha of 0.862, USSD had a Cronbach's alpha of 0.780, and voice calls had a Cronbach's alpha of 0.861. These findings clearly show that the questionnaire was reliable and no amendments were required.

### 3.7 Data Collection Procedure

A letter of gathering data was acquired from Nairobi University prior to the exercise of collecting data. Since pensioners in Jubilee Insurance are located in different parts of Nairobi and Kenya, the researcher gathered data by use of telephone calls. The researcher began by explaining the reason of conducting the study, followed by requesting pensioner to spare sometime to answer the questions. However, data from the key informants or leaders of departments was collected using google forms.

### **3.8 Data Analysis and Presentation**

This is the process of analysing data that comprises packaging of the collected data, organizing and structuring its key components in such a manner that findings can be efficiently and easily communicated (Bhattacharjee, 2012). Semi-structured questionnaires produced qualitative and quantitative data, which was differently analyzed by deploying diverse methods. However, key informant interview guide produced qualitative data.

Analysis of qualitative data is a range of procedures and processes whereby we shift from qualitative data that has been gathered, into certain form of understanding, explanation or interpretation of situations and people we are examining (Greener, 2011). To analyze qualitative data, this research made use of content analysis.

According to Bhattacharjee (2012), content analysis is a research instrument employed to establish presence of particular words, concepts or themes within certain qualitative data. It is a procedure for classification of behavioral or verbal data for use of summarization and classification. By deploying content analysis, it becomes easy for researchers to analyze and quantify presence, relationships and meanings of certain words, concepts or themes. Qualitative results reporting will be provided in form of a narrative.

Quantitative data analysis is a systematic investigation approach which involves collection of numerical data and then whatever is observed or collected is transformed into numerical data by a researcher. (Singpurwalla, 2013). Quantitative data in this study was analyzed by deploying descriptive and inferential statistics.

Descriptive statistics refers to brief description of coefficients which summarizes a certain set of data, which can either be a population sample or a representation of entire population. In addition, descriptive statistics are categorized into frequencies and percentages, measures of variability or standard deviation and measures of central tendency (Metsamuuronen, 2017). Inferential statistics in this study comprised of regression analysis as well as correlation analysis.

Since this study has four independent variables multiple regression model used was:

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \varepsilon$$

Whereby: Y= Dissemination of information for pension claims processing in Jubilee Insurance

$B_0$  = Constant

$\beta_1- \beta_4$  = Determination Coefficients

$X_1$  = Mobile applications

$X_2$  = Short message services

$X_3$  = Unstructured Supplementary Service Data (USSD)

$X_4$  = Voice calls

$\varepsilon$  = Error term

### 3.9 Ethical Considerations

Ethics is defined as acceptable or legal code of conduct that a researcher puts into consideration when carrying out a study. All borrowed ideas from other research were recognized so as to avoid plagiarism. The researcher further made sure questionnaires were only issued to willing respondents thereby facilitating voluntary participation. The respondents unwilling to take part in the study were not forced whatsoever. Furthermore, participants in this study were informed on reason and objectives of the study and were also informed that provided information was only be to utilized for educational undertaking. An authorization letter from Jubilee Insurance was obtained and a letter of data collection acquired from Nairobi University prior to the exercise of collecting data. Participants were given an assurance by researcher of confidentiality on obtained information. Moreover, to limit access of information to only the researcher, information acquired was assigned a password. Respondents' anonymity was facilitated by ensuring no information was assigned to a particular individual. Participants were informed not to specify their names during interviews or in questionnaires.

Jubilee Insurance was targeted as it is the largest insurance company in East and Central Africa. Research showed that smaller insurance companies lacked tools in mobile technology. Therefore, Jubilee Insurance provided a more realistic picture of utilization of mobile technology.

### 3.10 Operationalization of Variables

Objectives	Variables	Indicators	Measurement	Scale	Data collection method	Data analysis
To investigate influence of mobile applications on dissemination of information for pension claims processing	<b>Independent variable</b> Mobile Applications	<ul style="list-style-type: none"> <li>- Ease of use</li> <li>- Information Accuracy</li> <li>- Ease of access</li> </ul>	<ul style="list-style-type: none"> <li>- Accessing services using the mobile application</li> <li>- Receiving updates on pension claims processing</li> <li>- Retaining information in the mobile application when internet facility is not available</li> </ul>	Interval Scale	<ul style="list-style-type: none"> <li>• Questionnaire</li> <li>• Key Informant Interview</li> </ul>	<ul style="list-style-type: none"> <li>• Pearson correlation analysis</li> <li>• Regression analysis</li> <li>• Arithmetic Mean and Standard Deviation</li> </ul>
To assess influence of text messages on dissemination of information for pension claims processing	<b>Independent variable</b> Short messages services	<ul style="list-style-type: none"> <li>- Text Message Alerts</li> <li>- Frequency of Text Messages</li> <li>- Style of Text Messages</li> </ul>	<ul style="list-style-type: none"> <li>- Sending and receiving mobile text alerts on pension claims processing</li> <li>- Sending mobile text messages on regular basis</li> <li>- Sending text messages with specific key words that are easy to understand</li> </ul>	Interval Scale	<ul style="list-style-type: none"> <li>• Questionnaire</li> <li>• Key Informant Interview</li> </ul>	<ul style="list-style-type: none"> <li>• Pearson correlation analysis</li> <li>• Regression analysis</li> <li>• Arithmetic Mean and Standard Deviation</li> </ul>
To examine influence of USSD on dissemination of information for pension claims processing	<b>Independent variable</b> USSD	<ul style="list-style-type: none"> <li>- Flexibility</li> <li>- Cost</li> <li>- Security</li> </ul>	<ul style="list-style-type: none"> <li>- Accessing information easily on any mobile phone regardless of sophistication</li> <li>- Affordability as USSD codes offer a two-way data exchange sequence in real-time</li> <li>- Receiving instant feedback without relying on the internet</li> </ul>	Interval Scale	<ul style="list-style-type: none"> <li>• Questionnaire</li> <li>• Key Informant Interview</li> </ul>	<ul style="list-style-type: none"> <li>• Pearson correlation analysis</li> <li>• Regression analysis</li> <li>• Arithmetic Mean and Standard Deviation</li> </ul>
To establish influence of voice calls on dissemination of information for pension claims processing	<b>Independent variable</b> Voice calls	<ul style="list-style-type: none"> <li>- Information passed</li> <li>- Interactiveness</li> </ul>	<ul style="list-style-type: none"> <li>- Satisfied with information received</li> <li>- Receiving and responding to voice calls on updates</li> </ul>	Interval Scale	<ul style="list-style-type: none"> <li>• Questionnaire</li> <li>• Key informant Interview</li> </ul>	<ul style="list-style-type: none"> <li>• Pearson correlation analysis</li> <li>• Regression analysis</li> <li>• Arithmetic Mean and Standard Deviation</li> </ul>

## **CHAPTER FOUR**

### **RESEARCH FINDINGS AND DISCUSSIONS**

#### **4.1 Introduction**

This chapter comprises of data analysis, interpretation of results and presentation of study's findings in relation with the general and the specific objectives of the study. The study sought to investigate the influence of mobile technology on dissemination of information for pension claims processing in Jubilee Insurance. Specifically, the study sought to assess the influence of mobile applications, text messages, USSD and voice calls on dissemination of information for pension claims processing in Jubilee Insurance.

The chapter covers response rate, demographic data and descriptive statistics on mobile applications, text messages, USSD and voice calls on dissemination of information for pension claims processing in Jubilee Insurance. The chapter also encompasses inferential statistics that include correlation analysis and regression analysis.

#### **4.2 Response Rate**

The sample size of this study was 288 and it comprised of pensioners in Jubilee Insurance and heads of pension business, finance, legal services, internal audit, operations, information and communication technology, actuary, business development and strategy and business development departments.

The researcher prepared 288 questionnaires for the respondents during data collection process and 262 were fully filled. Thus, the response rate was 92.0%.

Kothari (2012) argues that a response rate that is more than 50% is considered adequate while excellent response rate is usually above 70%. This implies that the response rate in this research is good for making conclusions as well as recommendations.

#### **4.3 Demographic Data**

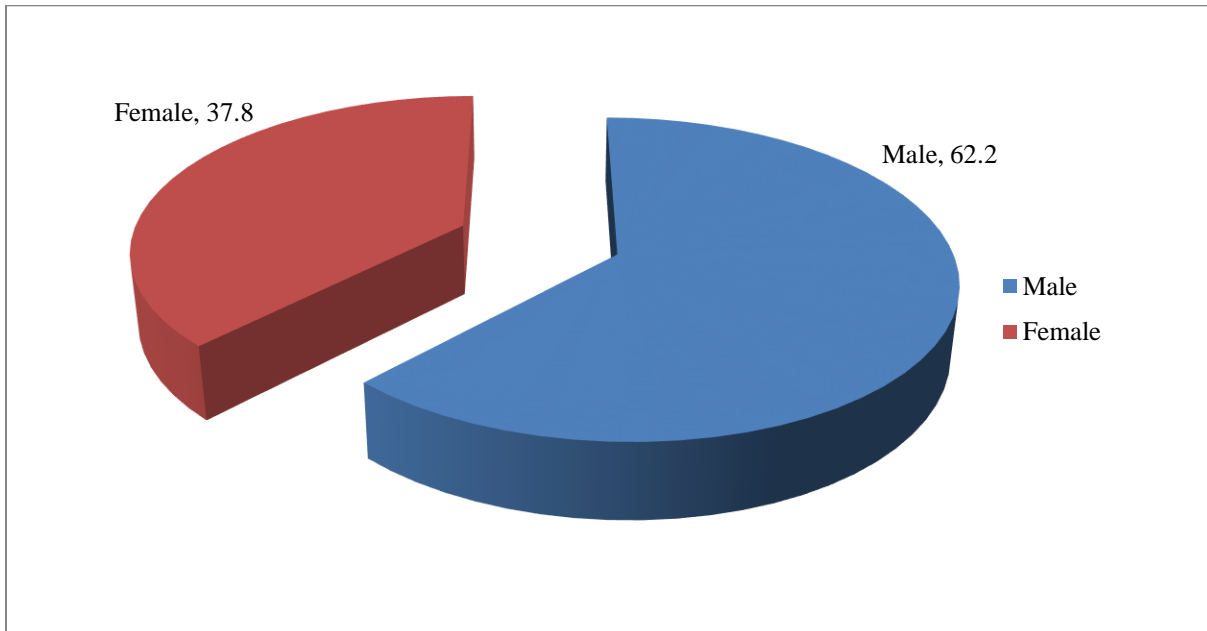
The demographic data in this research entailed gender, age category, duration of membership and highest academic level. The demographic data was presented in figures.



### 4.3.1 Gender of the Respondents

The pensioners and heads of department were requested to indicate their gender. The results were as depicted in Figure 4.1.

From the results, 62.2% specified to be Male while the rest (37.8%) were female. This implies that most of the members in Jubilee Insurance are male.



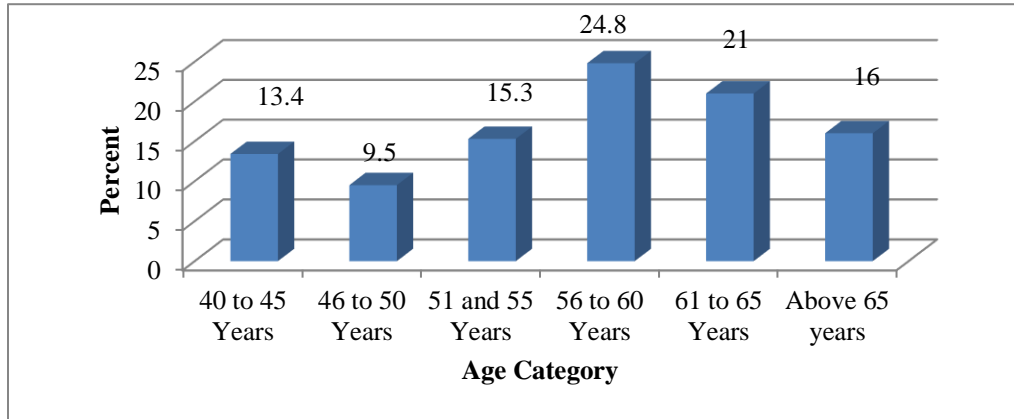
**Figure 4. 2: Gender of the Respondents**

### 4.3.2 Age of the respondents

As part of the demographic data, the participants were also requested to point out their age brackets. The results were as depicted in Figure 4.2.

From the results, 24.8% of the respondents pointed the age between 56 years and 60 years, 21.0% pointed out that they were aged between 61 years and 65 years, Further, 16.0% specified that they had above 65 years of age. In addition 15.3% specified 51 years and 55 years, 13.4% were aged between 40 years and 45 years while 9.5% of the respondents indicated they were aged between 46 years and 50 years.

This implies that most of the respondents were aged between 56 years and 60 years.

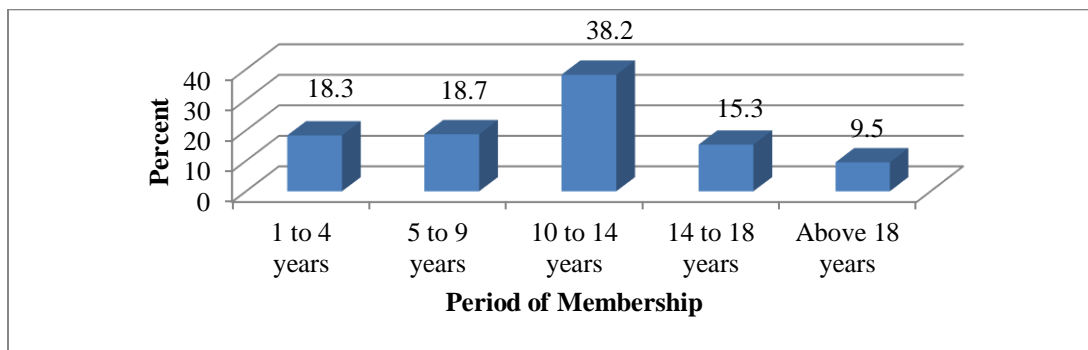


**Figure 4. 3: Age of the respondents**

#### 4.3.3 Period of Membership

As part of the demographic information, the participants were requested to point out the period of time they had been clients in Jubilee Insurance. The results were as shown in Figure 4.3.

From the results, 38.2% of the respondents specified that they had been clients in Jubilee Insurance for a period of between 10 years and 14 years, 18.7% pointed out that they had been clients for a period of between 5 years and 9 years. Further, 18.3% specified that they had been clients for a period of between 1 year and 4 years. In addition 15.3% had been members for a period of between 14 years and 18 years while 9.5% of the respondents had been clients for more than 18 years. This implies that most of the respondents had been clients of Jubilee Insurance for a period of between 10 years and 14 years.



**Figure 4. 4: Period of Membership**

#### 4.3.4 Participants' academic level

The respondents were also requested to indicate their highest academic level. The results were as shown in Figure 4.4. From the results, 43.5% of the respondents specified diploma level as their highest academic level, 27.5% pointed out that they had KCSE certificates, 17.2% specified that they had KCPE certificates, 5.0 % of the respondents indicated they had Bachelors' degree, 4.6% had Masters degree while 2.3% had PhD degree. This implies that most of the respondents were holders of diploma certificates.

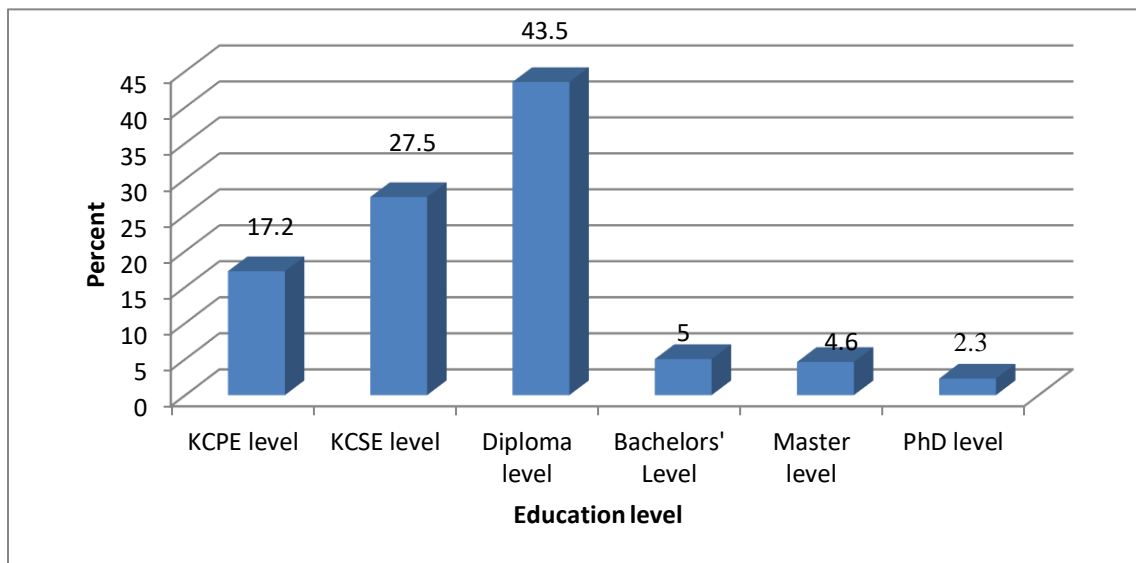


Figure 4. 5: Participants' academic level

#### 4.4 Dissemination of Information

The participants were needed to indicate the agreement on the following indicators of dissemination of information for pension claims processing in Jubilee Insurance. A 5 point scale was adopted where by 1 represented strongly disagree, 2 represented disagree, 3 represented Neutral, 4 represented agree and 5 represented strongly agree. The results were depicted in Table 4.1.

With a mean of 4.218(std. dv = 0.182) the pensioners agreed that the percentage of potential audience reached by information dissemination efforts is very high. In addition with a mean of 4.084(std. dv = 0.072) the participants agreed that through use of mobile technology Jubilee Insurance reaches a wide audience.

Park, Stanko and McShane (2019) revealed that use of mobile technology improves service delivery in the insurance industry.

**Table 4. 1: Dissemination of Information**

	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>Mean</b>	<b>Std. Deviation</b>
Through use of mobile technology Jubilee Insurance reaches a wide audience	3.8	7.6	7.6	38.2	42.7	4.084	0.072
The percentage of potential audience reached by information dissemination efforts is very high	5.7	7.6	3.8	24.8	58.0	4.218	0.182
Use of mobile technology has saved clients time since they no longer need to go to the office	5.7	13.4	11.5	48.9	20.6	3.6527	0.120

In addition, the participants agreed that use of mobile technology has saved clients time since they no longer need to go to the office. This is shown by a mean of 3.6527 (std. dv = 0.120). Ashwell (2017) argued that in the insurance industry, use of mobile technology which includes mobile applications, text messages, USSD and voice calls facilitates dissemination of information to pensioners.

#### **4.5 Mobile Applications**

The first specific objective of the study was to assess the influence of mobile applications on dissemination of information for pension claims processing in Jubilee Insurance

##### **4.5.1 Mobile Applications and dissemination of information**

The respondents were requested to show how they agree with various variables relating to mobile applications and dissemination of information for pension claims processing in Jubilee Insurance. The results were as shown in Table 4.3. The participants agreed that the symbols, icons and name used in the mobile application is appealing. This is shown by a mean of 3.984 (std. dv = 0.116).

**Table 4. 2: Mobile Applications and Dissemination of Information**

	1	2	3	4	5	Mean	Std. Deviation
Jubilee Insurance has developed mobile application	9.5	19.1	11.5	17.2	42.7	3.645	0.430
The symbols, icons and name used in the mobile application is appealing	5.7	5.7	11.5	38.5	38.5	3.984	0.116
I learnt to use the application without any written instruction and help	5.7	15.3	9.5	28.6	40.8	3.836	0.268
I have installed the mobile application developed by Jubilee Insurance in my phone	5.8	6.1	10.6	11.1	40.6	3.924	0.363
Information in the mobile applications is the same with the information in the organization website	9.5	11.5	7.6	29.4	42.0	3.828	0.338
I get all updates on pension claims processing through the mobile application	36.3	21.0	13.4	20.2	9.2	2.450	0.391
Mobile application is time saving and faster since no queuing	5.7	1.9	9.5	58.0	24.8	3.943	0.967

From the results, the participants also agreed that mobile application is time saving and faster since no queuing. This is supported by a mean of 3.943 (std. dv = 0.967). Butt and Rehman (2016) revealed that mobile application is quite reliable and time saving. In addition, it benefits both the organization and the customer.

As indicated in the results, the participants agreed that they learnt to use the application without any written instruction and help. This is shown by a mean of 3.836 (std. dv = 0.268). In addition, the participants also agreed that information in the mobile applications is the same with the information in the organization website. This is supported by a mean of 3.828 (std. dv = 0.338). Mahan, *et al.* (2019) mobile technology acceptance is determined by ease of use, perceived benefit and reliability of the technology. The respondents agreed that Jubilee Insurance has developed mobile application. This is shown by a mean of 3.645 (std. dv = 0.430).

However, the participants disagreed with the statement indicating that the mobile application helps them to retain information in the situation when internet facility is not available as shown by a mean of 2.496 (std. dv = 0.295). Murray (2010) revealed that mobile applications rely on network connectivity and availability of mobile data bundles.

From the findings, the participants disagreed with the statement indicating that pensioners get all updates on pension claims processing through the mobile application. This is supported by a mean of 2.450 (std. dv = 0.391). Further, with a mean of 3.924 (std. dv = 0.363), the participants agreed with the statement indicating that they have installed the mobile application developed by Jubilee Insurance in their phone. Park, Stanko and McShane (2019) revealed that mobile applications facilitates dissemination of information since once the user installs the application in his/her phone all he needs is mobile data to check on the available updates. Further, these applications saves time and money since no transportation cost incurred.

#### **4.5.2 Effects of Mobile application on dissemination of information**

The respondents were requested to state in their own view how else mobile application influences dissemination of information for pension claims processing in Jubilee Insurance. From the findings, the respondents indicated that mobile applications provide a platform for organizations to receive information, analyze it, and form a response. The pensioners use mobile applications to access information. Further, the pensioners indicated that the mobile application is easy to use and information is quite reliable. In addition, the key informants revealed that Jubilee Insurance has developed several mobile applications which can be used to access information on insurance policies.

*We have launched several mobile applications, which include JubiAgent application that is used by the organization agents to sell insurance services. In addition, we have also launched JubiCare mobile application which the client logs on to access policy details and updates (KI 003)*

The key informants revealed that the organization has also developed the JubiCare Application which is used by pensioners to access information on their insurance policy. These mobile applications are convenient and easy to use. The organization clients can access the information they need from their phones.

*Through use of JubiCare App clients are able to access all the information they need relating to their insurance policy and pension claims since we update the mobile applications with the latest information (KI 004).*

The key informant indicated that mobile applications enables the clients to access information on the claims processed and also access data on the insurance policy statements. Ochilo *et al.* (2019) revealed that mobile application usage is beneficial to both the organization and the customer since it saves clients money and time and also it saves organizational resources since no extra human resource will be needed. The clients will be able to access information from their phones. Further, through use of mobile information clients are able to access information from wherever they are, provided they have internet access.

#### **4.6 Text Messages**

The second specific objective of the study was to assess the influence of text messages on dissemination of information for pension claims processing in Jubilee Insurance.

##### **4.6.1 Text messages and dissemination of information**

The pensioners were requested to indicate their level of agreement on various statements relating to text messages and dissemination of information for pension claims processing in Jubilee Insurance. The results were as shown Table 4.2.

From the results, the respondents agreed that Jubilee Insurance uses specific key words in their text messages. This is shown by a mean of 4.258 (std. dv = 0.998). Further, the participants agreed that they rely on the text messages sent by Jubilee Insurance for updates. This is shown by a mean of 3.928 (std. dv = 0.237). As indicated by a mean of 3.905 (std. dv = 0.022) the respondents also agreed that Jubilee Insurance sends text messages on regular basis. Wong, Jones and Rubin (2017) argued that short message services are reliable for information dissemination. With a mean of 3.886 (std. dv = 1.063) the respondents agreed that they do receive text messages from Jubilee Insurance. In addition, the participants also agreed that text messages sent by Jubilee Insurance are simple to understand. This is supported by a mean of 3.878 (std. dv = 0.197).

As shown by a mean of 3.763 (std. dv = 0.180) the participants agreed that in every transaction, the pensioners receive a text message notification.

Dash and Gladwin (2017) argued that simplicity, usability and social interactivity features of technology determine the extent of technology acceptance.

**Table 4. 3: Text Messages and Dissemination of Information**

	1	2	3	4	5	Mean	Std. Deviation
Jubilee Insurance sends text messages on regular basis	0.0	9.5	28.6	23.7	38.2	3.905	0.022
I do receive text messages from Jubilee Insurance	7.6	9.5	11.5	29.4	42.0	3.886	1.063
I rely on the text messages sent by Jubilee Insurance for updates	3.8	15.3	11.5	23.3	46.2	3.928	0.237
Jubilee Insurance sends mobile text alerts on pension claims processing	15.3	42.0	22.5	6.9	13.4	2.311	0.220
In every transaction, I receive a text message notification	5.7	15.3	3.8	47.3	27.9	3.763	0.180
I have never received any text message from Jubilee Insurance	19.1	53.4	4.6	11.5	11.5	2.428	0.244
Text messages send by Jubilee Insurance are simple to understand	7.6	7.6	9.5	39.7	35.5	3.878	0.197
Jubilee Insurance uses specific key words in their text messages.	0.0	9.5	11.5	22.9	56.1	4.258	0.998

With a mean of 2.428 (std. dv = 0.244) the participants disagreed with the statement indicating that they have never received any text message from Jubilee Insurance. Further, as shown by a mean of 2.311 (std. dv = 0.220) the respondents disagreed with the statement indicating that Jubilee Insurance sends mobile text alerts on pension claims processing. Zhang, Gao, Wang and Yang (2017) depicts that the strength of a system lies in the ease to understand the content of the message.



#### **4.6.2 Effects of text messages on dissemination of information**

The respondents were requested to state in their own view how else text messages influences dissemination of information for pension claims processing in Jubilee Insurance. From the findings, the pensioners indicated that short message services positively influences information dissemination since the interested parties are notified on time about the happenings.

In addition the Key informants indicated that the organization (Jubilee Insurance) sends text messages to its clients from time to time.

*We send text messages to our clients to give them the latest update on insurance policies and also remind them of the existing policies. (KI 001)*

Further the key informants indicated that use of text messages in disseminating essential information might sometime not be effective since not all people know how to read. Sometimes one might even forget to hear the message hence not receiving the message in the intended time. From the results, the key informants indicated that use of text messages to disseminate information on pension processing gives on the general updates. However, for personal issues relating to insurance policies one has to go to the office.

*The information we disseminate to our clients is generally related to various policies and pension processing. (KI 002)*

The key informants further indicated that although short message services is a cheap and easy means of disseminating information to a large population it should be supported by other technological means of information dissemination. Dansieh (2011) revealed that short message service is essential and capable of disseminating information to large target audience. However, it should be supported by other means of information dissemination.

#### **4.7 Unstructured Supplementary Service Data (USSD)**

The third specific objective of the study was to assess the influence of unstructured supplementary service data (USSD) on dissemination of information for pension claims processing in Jubilee Insurance.

#### 4.7.1 USSD and Dissemination of Information

The respondents were requested to indicate their level of agreement on various statements relating to USSD and dissemination of information for pension claims processing in Jubilee Insurance. The results were as shown in Table 4.4.

**Table 4. 4: USSD and Dissemination of Information**

	1	2	3	4	5	Mean	Std. Deviation
Jubilee Insurance sends USSD messages to all its client	0.0	13.4	24.8	24.8	37.0	3.855	0.066
I receive USSD messages from Jubilee Insurance on pension claims processing	49.6	21.0	11.1	13.7	4.6	2.027	0.255
USSD codes are accessible over any mobile phone regardless of sophistication and affordability	5.7	5.7	17.2	44.3	27.1	3.813	0.075
USSD codes are faster as compared to short messaging service (SMS)	5.7	9.5	15.3	48.9	20.6	3.691	0.079
USSD codes offer a two-way data exchange sequence of a real-time connection for short periods of time making it a secure and reliable service.	5.7	11.5	9.5	40.5	32.8	3.832	0.172
USSD provide handset independent solutions and it is highly cost effective	13.4	7.6	17.2	15.3	46.6	3.741	0.444
I prefer USSD messages as compared to other forms of information dissemination	7.6	11.5	5.7	38.2	37.0	3.855	0.248
USSD offers convenience and secure services	9.5	15.3	13.4	28.6	33.2	3.607	0.337
I receive instant feedback without relying on the internet	7.6	3.8	7.6	36.3	44.7	4.065	0.168

From the results, the respondents agreed that pensioners receive instant feedback without relying on the internet. This is indicated by a mean of 4.065 (std. dv = 0.168).

The respondents also agreed that Jubilee Insurance sends USSD messages to all clients. This is indicated by a mean of 3.855 (std. dv = 0.066). Further the participants agreed they prefer USSD messages as compared to other forms of information dissemination. This is shown by a mean of 3.855 (std. dv = 0.248). Ndour and Gueye, (2016) indicated that USSD is the most popular available communications technology to deliver mobile financial services to the Bottom of the Pyramid (BoP). It is used by large-scale companies.

The participants agreed that USSD codes offer a two-way data exchange sequence of a real-time connection for short periods of time making it a secure and reliable service. This is supported by a mean of 3.832 (std. dv = 0.172). In addition, the participants agreed that USSD codes are accessible over any mobile phone regardless of sophistication and affordability. This is supported by a mean of 3.813 (std. dv = 0.075). Further, as shown by a mean of 3.741 (std. dv = 0.444) the participants agreed that USSD provide handset independent solutions and it is highly cost effective. Katherine and Alexander (2016) indicated that USSD is a simple technology, adapted to the reality of the BoP's digital usage, and has the undeniable advantage to be used by anyone. It provides fundamental services and new communication channels for businesses.

The participants agreed that USSD codes are faster as compared to short messaging service (SMS). This is supported by a mean of 3.691 (std. dv = 0.079). Further, as shown by a mean of 3.607 (std. dv = 0.337) the participants agreed that USSD offers convenience and secure services. However, with a mean of 2.027 (std. dv = 0.255) the participants disagreed with the statement indicating that they receive USSD messages from Jubilee Insurance on pension claims processing. Lovemore and Phiri (2017) argued that USSD application is more effective and efficient as compared to traditional computer based method of information dissemination.

#### **4.7.2 Effects of USSD on Dissemination of Information**

The respondents were requested to state in their own view how else USSD influences dissemination of information for pension claims processing in Jubilee Insurance. From the findings, the pensioners indicated that Jubilee Insurance uses USSD to disseminate information. In addition, the pensioners revealed that clients can access their policy information through use of USSD codes which are fast and do not need use of mobile data.

The key informants revealed that use of USSD codes helps clients to access various services offered by Jubilee Insurance.

*Our clients can use USSD codes to check the expiry date of their insurance policies. Further through use of USSD codes they can get help on how to make their monthly contribution and also access other services related to their insurance policy (KI 005)*

The key informants indicated that they receive USSD alert messages. In addition through use of \*643# the clients can access information on their insurance policies. Through the USSD codes information is disseminated on various insurance products offered by Jubilee Insurance hence saving clients time and money which would have been used for transport going to the office.

*We launched \*643# service whereby the successfully registered clients can access information on their insurance policies. However, the code is session based and information disappears from the clients phone once the session is over (KI 006).*

Nevertheless, the key informants revealed that to access information through use of the USSD messages charges are incurred. Further, the participants indicated that USSD is based on time session and immediately the session is over the information disappears from the phone of the user. Lovemore and Phiri (2017) revealed that it is clear that a web based system integrated with SMS or USSD can provide a more convenient and robust method of information disseminating.

## **4.8 Voice Calls**

The fourth specific objective of the study was to assess the influence of voice calls on dissemination of information for pension claims processing in Jubilee Insurance.

### **4.8.1 Voice Calls and dissemination of information**

The pensioners were requested to show their agreement level on statements on voice calls and dissemination of information for pension claims processing in Jubilee Insurance.

The results were as indicated in Table 4.5. With a mean of 4.218 (std. dv = 0.149) the participants agreed that when they have queries they always call the Jubilee Insurance customer care.

**Table 4. 5: Voice Calls and Dissemination of Information**

	1	2	3	4	5	Mean	Std. Deviation
I receive update calls concerning pension claim processing	22.9	36.3	27.1	6.9	6.9	2.386	0.118
Am satisfied with the help I get whenever I call Jubilee Insurance customer care	7.6	5.7	9.5	28.6	48.5	4.046	0.225
When I have queries I always call the Jubilee Insurance customer care	3.8	7.6	11.5	17.2	59.9	4.218	0.149
The Jubilee customer care direct line is always busy	21.0	34.4	26.7	6.5	11.5	2.431	0.221
Jubilee Insurance clients are contacted by interactive voice calls whenever the organization intends to pass an essential information	5.7	5.7	15.3	28.6	44.7	4.008	0.161
Jubilee Insurance calls its clients to update them on the current happenings	3.8	11.5	9.5	30.5	44.7	4.008	0.161
I have never received a call from Jubilee Insurance	13.4	45.8	13.7	17.9	9.2	2.437	0.188

From the results, the respondents agreed that they are satisfied with the help they get whenever they call Jubilee Insurance customer care. This is shown by a mean of 4.046 (std. dv = 0.225). In addition, as shown by a mean of 4.008 (std. dv = 0.161), they agreed that Jubilee Insurance clients are contacted by interactive voice calls whenever the organization intends to pass an essential information. Ganesan, Umadikar and Prashant (2015) indicated that voice calls are effective channel of communication for disseminating technological information.

The participants agreed that Jubilee Insurance calls its clients to update them on the current happenings. This is shown by a mean of 4.008 (std. dv = 0.161). However, as shown by a mean of 2.437 (std. dv = 0.188), the participants disagreed with the statement indicating that they have never received a call from Jubilee Insurance. Yasmin (2016) revealed that voice call facilitates dissemination of essential information.

As shown by a mean of 2.431 (std. dv = 0.221) the participants disagreed with the statement indicating that Jubilee customer care direct line is always busy. Further, the participants disagreed with the statement indicating that pensioners always receive update calls concerning pension claim processing. This is supported by a mean of 2.386 (std. dv = 0.118). Egbule, Agwu and Uzokwe (2014) argued that the quality of service delivery is determined through the extent of customer satisfaction.

#### **4.8.2 Effects of Voice calls on Dissemination of Information**

The respondents were requested to state in their own view how else voice calls influences dissemination of information for pension claims processing in Jubilee Insurance. From the findings, the pensioners indicated that they use voice calls to clarify information on their insurance policies. Further, the pensioners indicated that voice calls influences information dissemination on claim processing. Most of the pensioners revealed that they receive voice calls from the organization but they rarely call to enquire due to the high charges incurred. Tegegn and Dafisa (2017) revealed that major factors which affect cell phone usage as: costly technologies, insufficient infrastructure, inadequate ICT skills, expensive and poor connectivity, unsuitable policies on ICT, communication barriers, insufficient systems and credit facilities and low bandwidth. Key informants indicated that they call clients to pass personal information relation to pension claims.

*We call our clients to update them on their claims or to remind them on expiry of their insurance policies and tell them when and how they can renew their policies (KI 007).*

The key informants further revealed that voice calls have increased accessibility since one can call from anywhere provided there is network and airtime. Voice calls are completely portable. This gives the pensioners an advantage of accessing information on their insurance policies through voice calls.

*Our clients are able to reach Jubilee Insurance all day and night through our 24/7 Contact Center and AI powered Chatbot (Julie) (KI 008).*

## 4.9 Inferential Statistics

Inferential statistics such as correlation analysis and regression analysis were used to assess the relationships between the independent variables (text messages, mobile applications, USSD and voice calls) and the dependent variable (dissemination of information for pension claims processing in Jubilee Insurance).

### 4.9.1 Correlation Analysis

This research adopted Pearson correlation analysis to determine how the dependent variable relates with the independent variables. The results were as depicted in Table 4.6.

**Table 4. 6: Correlations Coefficients**

		<b>Dissemination of Information</b>	<b>Text Messages</b>	<b>Mobile Applications</b>	<b>Unstructured Supplementary Service Data (USSD)</b>	<b>Voice Calls</b>
Dissemination of Information	Pearson Correlation	1				
	Sig. (2-tailed)					
	N	262				
Mobile Applications	Pearson Correlation	.773	.097	1		
	Sig. (2-tailed)	.000	.187			
	N	262	262	262		
Text Messages	Pearson Correlation	.884	1			
	Sig. (2-tailed)	.000				
	N	262	262	262		
Unstructured Supplementary Service Data (USSD)	Pearson Correlation	.843	.274	.108	1	
	Sig. (2-tailed)	.000	.071	.171		
	N	262	262	262	262	
Voice Calls	Pearson Correlation	.843	.167	.274	.108	1
	Sig. (2-tailed)	.000	.087	.071	.171	
	N	262	262	262	262	262

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

As illustrated in table 4.6, the results revealed that mobile applications has a positive and significant association with dissemination of information ( $r=0.773$ ,  $p$  value= $0.0000$ ). The  $p$ -value ( $0.000$ ) was less than the significant level  $0.05$  hence making the association significant. The findings concur with those of Njuguna (2016) who found that mobile application has a positive and significant influence on information dissemination.

Text messages has a positive and significant association with dissemination of information ( $r=0.884$ ,  $p$  value = $0.000$ ). The  $p$ -value ( $0.000$ ) was less than the significant level  $0.05$  hence making the association significant. The results are in agreement with Beza, Reidsma and Melisew (2018) findings that short message service affects dissemination of information.

The results show that unstructured supplementary service data (USSD has a positive and significant influence on dissemination of information ( $r=0.843$ ,  $p$  value= $0.000$ ). The  $p$ -value ( $0.000$ ) was less than the significant level  $0.05$  hence making the association significant. The results are in agreement with the findings of Katherine and Alexander (2016) that USSD has a positive and significant influence on information dissemination.

The results revealed that voice calls has a positive and significant influence on dissemination of information ( $r=0.843$ ,  $p$  value= $0.000$ ). The  $p$ -value ( $0.000$ ) was less than the significant level  $0.05$  hence making the association significant. The findings are in line with those of Mugwimi (2015) that voice calls has positive and significant impact on information dissemination.

#### **4.9.2 Regression Analysis**

This research used multivariate regression analysis to determine the association between the independent variables (mobile applications, text messages, unstructured supplementary service data (USSD) and voice calls) and the dependent variable (dissemination of information for pension claims processing in Jubilee Insurance).

The multivariate regression model was as follows:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

Whereby:

Y= Dissemination of information for pension claims processing in Jubilee Insurance

$B_0$  = Constant



- $\beta_1 - \beta_4$  = Determination Coefficients
- $X_1$  = Mobile applications
- $X_2$  = Short message services
- $X_3$  = Unstructured Supplementary Service Data (USSD)
- $X_4$  = Voice calls
- $\varepsilon$  = Error term

The researcher used R-squared to show the variation in dependent variable (dissemination of information for pension claims processing in Jubilee Insurance) that could be explained by mobile applications, text messages, USSD and voice calls (independent variables).

**Table 4. 7: Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.885 <sup>a</sup>	0.783 (78.3%)	0.711	0.16355
a. Predictors: (Constant), Voice Calls, Unstructured Supplementary Service Data (USSD), Mobile Applications, Text Messages				

The R squared was 0.783 and this implied that 78.3% of the dependent variable (dissemination of information for pension claims processing in Jubilee Insurance) could be explained by independent variables (mobile applications, text messages, USSD and voice calls).

**Analysis of Variance**

The research used analysis of variance to determine if the model was good fit for the data.

**Table 4. 8: Analysis of Variance**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	303.222	4	75.806	83.921	.000 <sup>b</sup>
	Residual	6.875	257	.027		
	Total	310.097	261			
a. Dependent Variable: Dissemination of Information						
b. Predictors: (Constant), Voice Calls, Unstructured Supplementary Service Data (USSD), Mobile Applications, Text Messages						

As depicted in table 4.8, the F calculated was 83.921 which is higher than the F critical value that was 2.4068. Besides, the p value was 0.000 which is less than the significant level of 0.05. This implies that the model was a good fit for the data hence can be used to show the impact of independent variables (mobile applications, text messages, USSD and voice calls) on the dependent variable (dissemination of information for pension claims processing in Jubilee Insurance).

### Regression Coefficients

The regression equation was;

$$Y = 0.779 + 0.176X_1 + 0.314X_2 + 0.261X_3 + 0.245X_4$$

The results revealed that mobile applications positively and significantly influence dissemination of information. ( $\beta_1 = 0.176$ , p value = 0.001). The p-value (0.001) was less than the significant level 0.05 hence making the relationship significant. This implies that mobile applications lead to an improvement in dissemination of information. The findings are in line with those of Njuguna (2016) who found that mobile application has a positive and significant influence on information dissemination.

**Table 4. 9: Regression Coefficients**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.779	0.119		6.546	0.000
	Mobile Applications	0.176	0.072	0.171	2.444	0.001
	Text Messages	0.314	0.071	0.304	4.423	0.000
	Unstructured Supplementary Service Data (USSD)	0.261	0.070	0.257	3.729	0.000
	Voice Calls	0.245	0.079	0.243	3.101	0.000
a. Dependent Variable: Dissemination of Information						

In addition, the results revealed that text messages has a positive and significant influence on dissemination of information ( $\beta_2=0.314$ , p value= 0.000). The p-value (0.000) was less than the significant level 0.05 hence making the relationship significant. This implies that text messages lead to an improvement in dissemination of information. These findings concur with the findings of Beza, Reidsma and Melisew (2018) that short message service has a positive and significant influence on dissemination of information in an organization.

Furthermore, the results revealed that unstructured supplementary service data (USSD has positive and significant influence on dissemination of information. ( $\beta_3=0.261$ , p value=0.000). The p-value (0.000) was less than the significant level 0.05 hence making the relationship significant. This implies that unstructured supplementary service data (USSD improves dissemination of information. These findings concur with the findings of Katherine and Alexander (2016) that USSD has a positive and significant influence on information dissemination.

The results revealed that voice calls has a positive and significant influence on dissemination of information. ( $\beta_4=0.245$ , p value= 0.000). The p-value (0.000) was less than the significant level 0.05 hence making the relationship significant. This implies that voice calls leads to an improvement in dissemination of information. The findings are in line with those of Mugwimi (2015) who indicated that information dissemination is improved through use of voice calls.

## **CHAPTER FIVE**

### **SUMMARY, CONCLUSION AND RECOMMENDATIONS**

#### **5.1 Introduction**

This chapter discusses the summary of the findings and makes conclusions together with recommendation for further studies. This discussion is done in line with the objective of the research which was to examine the influence of mobile technology (mobile applications, text messages, USSD and voice calls) on dissemination of information for pension claims processing in Jubilee Insurance.

#### **5.2 Summary**

This sub-section presents the summary of the findings on the influence of mobile applications, text messages, USSD and voice calls on dissemination of information for pension claims processing in Jubilee Insurance.

##### **5.2.1 Mobile Applications and Dissemination of Information for Pension Claims Processing in Jubilee Insurance**

The study established that mobile application has a positive and significant association with dissemination of information. The study found that Jubilee Insurance has developed mobile application. Findings revealed that among the applications developed by Jubilee Insurance include JubiAgent Application which is used by the organization agents to sell insurance services. In addition, the organization has developed the JubiCare Application which is used by pensioners to access information on their insurance policy. Further, it was found that information in the mobile applications is the same with the information in the organization website.

Findings established that mobile application is time saving and faster since no queuing. In addition, it was found that the symbols, icons and name used in the mobile application is appealing. The study established that the mobile applications developed by Jubilee Insurance are easy to use since clients are able to learn to use the application without any written instruction and help.

Further, it was found that information can only be accessed from the mobile application through use of mobile data or Wi-Fi connection. The study also revealed that the mobile applications developed by Jubilee Insurance sometimes take time to load or even fail to load at all hence making clients unable to view updates.

### **5.2.2 Text Messages and Dissemination of Information for Pension Claims Processing in Jubilee Insurance**

The study found that text messages have a positive and significant influence on dissemination of information for pension claims processing in Jubilee Insurance. The study revealed that Jubilee Insurance sends mobile text alerts and that clients receive text messages from Jubilee Insurance.

Further the study revealed that most clients rely on the text messages sent by Jubilee Insurance for updates. The study revealed that text messages sent by Jubilee Insurance are simple to understand. In addition, it was found that Jubilee Insurance uses specific key words in their text messages.

The study finding revealed that use of text messages in disseminating essential information might sometime not be effective since not all pensioners receives the message on time. From the results, the findings also revealed that Jubilee Insurance needs to make use of text messages to disseminate information on pension claim processing.

### **5.2.3 USSD and Dissemination of Information for Pension Claims Processing in Jubilee Insurance**

The study found that unstructured supplementary service data (USSD) has positive and significant influence on dissemination of information. Findings revealed that Jubilee Insurance sends USSD messages to clients. The study found that most clients are registered to \*643# service where they can access information on their insurance policy. In addition the study found that through the USSD codes information is disseminated on various insurance products offered by Jubilee Insurance hence saving clients time and money which would have been used for transport going to the office.

The study findings revealed that USSD codes are accessible over any mobile phone regardless of sophistication and affordability. In addition, the study found that USSD codes are faster as compared to short messaging service (SMS). The study findings further revealed that USSD codes offer a two-way data exchange sequence of a real-time connection for short periods of time making it a secure and reliable service. The results established that clients receive instant feedback without relying on the internet.

The study established that USSD offers convenience and secure services. In addition, USSD provide handset independent solutions and it is highly cost effective. However, the study revealed that clients do not receive USSD messages from Jubilee Insurance on pension claims processing. Further, the study revealed that USSD is based on time session and immediately the session is over the information disappears from the phone of the user. The study also found that accessing information through use of USSD is charged.

#### **5.2.4 Voice Calls and Dissemination of Information for Pension Claims Processing in Jubilee Insurance**

The study found that voice calls have a positive and significant influence on dissemination of information for pension claims processing in Jubilee Insurance. Findings revealed that Jubilee Insurance clients are contacted by interactive voice calls whenever the organization intends to pass an essential information. In addition, Jubilee Insurance calls its clients to update them on the current happenings. The study also revealed that clients receive calls reminding them to make their contributions whenever they forget. Further, the study revealed that clients are satisfied with the help they get whenever they call Jubilee Insurance customer care. It was also found that the Jubilee customer care direct line is always reachable.

However, the study revealed that before deadline for monthly payments clients are not always reminded through a voice call. Further clients do not always get calls for updates on pension claims processing. The study found that whenever clients have a claim, they are able to reach Jubilee Insurance all day and night through their 24/7 Contact Center and AI powered Chatbot (Julie). However, some pensioners have never received voice calls from Jubilee Insurance. Findings revealed that clients with claims always get calls for attending scheduled visits and are given a chance to ask questions concerning pension claim processing.

### **5.3 Conclusions**

The study concludes that mobile application has a positive and significant association with dissemination of information. The study results revealed that mobile application easy access, simplicity and usability influences dissemination of information. This indicates that improvement in mobile application easy access, simplicity and usability leads to improvement in dissemination of information for pension claims processing in Jubilee Insurance.

The study also concludes that text messages have a positive and significant influence on dissemination of information for pension claims processing in Jubilee Insurance. Findings revealed that style of messages, frequency of text messages and forms of texting influence information dissemination. This indicates that improvement in short messages service leads to improvement in dissemination of information for pension claims processing in Jubilee Insurance.

Further, this study concludes that unstructured supplementary service data (USSD) has positive and significant influence on dissemination of information. The study revealed that USSD security, flexibility and cost influences information dissemination. This indicates that improvement in USSD security, flexibility and cost leads to improvement in dissemination of information for pension claims processing in Jubilee Insurance.

The study also concludes that voice calls have a positive and significant influence on dissemination of information for pension claims processing in Jubilee Insurance. The study findings revealed that frequency of calls, information passed and interactivity influence information dissemination. This indicates that improvement in frequency of calls, information passed and interactivity leads to improvement in dissemination of information for pension claims processing in Jubilee Insurance.

### **5.4 Limitations of the Study**

This study experienced various limitations that were addressed. The participants were reluctant in providing information. However, the participants were assured of confidentiality of information provided. In addition, no records on the participants names were kept to ensure that no information provided could be attributed to a particular participant.

## **5.5 Recommendations**

This study recommends that the top management in Jubilee Insurance should encourage their clients to install the mobile application to enable them access information on their policies and claims from their phones at any given time.

Further, the study found that not all clients prefer using mobile applications for updates. This study therefore recommends that the top management in Jubilee Insurance should encourage their clients to make use of the mobile applications to access all the information they need.

The study found that most pensioners rely on text messages sent by Jubilee Insurance for updates. This study therefore recommends that Jubilee Insurance should ensure regular texts are sent to clients updating them on their claims or informing them on their pension claims processing status.

The study found that Jubilee Insurance does not send text messages on regular basis regarding pension claims processing. This study therefore recommends that the top management in Jubilee Insurance should ensure that clients receive text notification on regular basis since most of the clients rely on text messages for updates.

Further, the finding revealed that USSD is session based and the information disappears from the user's phone once the session is over. This study therefore recommends that the top management of Jubilee Insurance should increase the session time to enable their clients to access the information they need concerning insurance policies and claim processing.

The study found that clients are satisfied with the help they get whenever they call Jubilee Insurance customer care. This study therefore recommends that the top management should maintain the quality of services delivered to clients through voice call so as to retain their clients. In addition through quality services the organization is likely to increase its customer base since the current pensioners are most likely to refer their friends.



## **5.6 Recommendation for Further Studies**

The main purpose of the study was to examine the influence of mobile technology on dissemination of information for pension claims processing in Jubilee Insurance. However, this study was limited to Jubilee Insurance and the findings cannot be generalized to other insurance companies. Therefore, the study recommends that further studies should be conducted on the influence of mobile technology on dissemination of information in other insurance companies in Kenya.

In addition, the study found that 78.3% of dissemination of information for pension claims processing in Jubilee Insurance could be explained by mobile technology. As such, further studies should be conducted to assess other factors that influence dissemination of information for pension claims processing in Jubilee Insurance and other insurance companies.

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## APPENDICES

### Appendix 1: Questionnaire

This is an academic study examining the influence of mobile technology on dissemination of information for pension claims processing in Jubilee Insurance, Kenya. The information herein requested is for use to meet academic requirements and as such shall be treated with maximum confidentiality.

#### SECTION 1: DEMOGRAPHIC DATA

Please tick inside the provided boxes when answering the provided questions. [ ✓ ]

1. Please indicate your gender.

Male  Female

2. Please point out your age category?

40 to 45 Years  46 to 50 Years   
51 and 55 Years  56 to 60 Years   
61 to 65 Years  Above 65 years

3. For how long have you been a member of Jubilee Insurance?

1 to 4 years  5 to 9 years   
10 to 14 years  14 to 18 years   
Above 18 years

4. Please specify your highest level of academic learning?

Primary level  Secondary level   
Diploma level  Undergraduate Level   
Master level  PhD level

**SECTION 2: Dissemination of Information**

5. Please indicate your agreement level on various statements relating to dissemination of information for pension claims processing in Jubilee Insurance. Please tick on the most appropriate response by using a 5 point Likert scale where 5 symbolizes strongly agree, 4 symbolizes agree, 3 symbolizes neutral, 2 symbolizes strongly disagree and 1 symbolizes strongly disagree.

<b>Statement</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>Number of clients reached</b>					
Through use of mobile technology Jubilee Insurance reaches a wide audience					
The percentage of potential audience reached by information dissemination efforts is very high					
Use of mobile technology has saved clients time since they no longer need to go to the office					

**SECTION 3: Mobile Applications**

6. Please indicate your agreement level on various statements relating to mobile applications and dissemination of information for pension claims processing in Jubilee Insurance. Please tick on the most appropriate response by using a 5 point Likert scale where 5 symbolizes strongly agree, 4 symbolizes agree, 3 symbolizes neutral, 2 symbolizes strongly disagree and 1 symbolizes strongly disagree.

<b>Statement</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>Ease of Use</b>					
Jubilee Insurance has developed mobile application					
The symbols, icons and names of the interface are intuitive					
I learnt to use the application without any written instruction and help					

<b>Information Accuracy</b>					
I have installed the mobile application developed by Jubilee Insurance in my phone					
Information in the mobile applications is the same with the information in the organization website					
I get all updates on pension claims processing through the mobile application					
<b>Ease of Access</b>					
Mobile application is time saving and faster since no queuing					

7. Please indicate how else mobile applications influences dissemination of information for pension claims processing in Jubilee Insurance?

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#### **SECTION 4: Text Messages**

8. Please indicate your agreement level on various statements relating to text messages and dissemination of information for pension claims processing in Jubilee Insurance. Please tick on the most appropriate response by using a 5 point Likert scale where 5 symbolizes strongly agree, 4 symbolizes agree, 3 symbolizes neutral, 2 symbolizes strongly disagree and 1 symbolizes strongly disagree.

<b>Statement</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>Text Message Alerts</b>					
Jubilee Insurance sends text messages on regular basis					
I do receive text messages from Jubilee Insurance					
I rely on the text messages sent by Jubilee Insurance for updates					

<b>Frequency of text messages</b>					
Jubilee Insurance sends mobile texts on pension claims processing					
I only receive text message from Jubilee Insurance when I carry out a transaction					
I have never received any text message from Jubilee Insurance					
<b>Style of Message</b>					
Text messages sent by Jubilee Insurance are simple to understand					
Jubilee Insurance uses specific key words in their text messages.					

9. Please indicate how else text messages influences dissemination of information for pension claims processing in Jubilee Insurance?

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**SECTION 5: Unstructured Supplementary Service Data (USSD)**

10. Please indicate your agreement level on various statements relating to unstructured supplementary service data and dissemination of information for pension claims processing in Jubilee Insurance. Please tick on the most appropriate response by using a 5 point Likert scale where 5 symbolizes strongly agree, 4 symbolizes agree, 3 symbolizes neutral, 2 symbolizes strongly disagree and 1 symbolizes strongly disagree.

<b>Statement</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>Flexibility</b>					
Jubilee Insurance sends USSD messages to all its client					
I receive USSD messages from Jubilee Insurance on pension claims processing					
USSD codes are easily accessible over any mobile phone regardless of sophistication					



<b>Cost</b>					
USSD codes are faster as compared to short messaging service (SMS)					
USSD codes offer a two-way data exchange sequence of a real-time connection for short periods of time making it a cheaper and reliable service					
USSD provide handset independent solutions and it is highly cost effective					
<b>Security</b>					
I prefer USSD messages as compared to other forms of information dissemination					
USSD offers convenience and secure services					
I receive instant feedback without relying on the internet					

11. Please indicate how else unstructured supplementary service data influence dissemination of information for pension claims processing in Jubilee Insurance?

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**SECTION 6: Voice Calls**

12. Please indicate your agreement level on the various statements relating voice calls and dissemination of information for pension claims processing in Jubilee Insurance. Please tick on the most appropriate response by using a 5 point Likert scale where 5 symbolizes strongly agree, 4 symbolizes agree, 3 symbolizes neutral, 2 symbolizes strongly disagree and 1 symbolizes strongly disagree.

<b>Statement</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>Information Passed</b>					
I receive update calls and I am given a chance to ask questions concerning pension claim processing					
Am satisfied with the information I get whenever I call Jubilee Insurance customer care					

When I have queries I always call the Jubilee Insurance customer care					
The Jubilee customer care direct line is always busy					
<b>Interactiveness</b>					
Jubilee Insurance clients are contacted by interactive voice calls whenever the organization intends to pass an essential information					
Jubilee Insurance calls its clients to update them on the current happenings					
I have never received a call from Jubilee Insurance					

13. Please indicate how else voice calls influence dissemination of information for pension claims processing in Jubilee Insurance?

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## **Appendix II: Key Informant Interview Guide**

This study seeks to investigate the influence of mobile technology on dissemination of information for pension claims processing in Jubilee Insurance. The data collected from this study will be purely for purposes of learning, the responses obtained will be treated with utmost confidentiality and the names of respondents are not required.

### **SECTION A: General Information**

1. Which department do you head?
2. For how long have you worked in the organization?

### **SECTION B: Mobile Technology and Dissemination of Information for Pension Claims Processing**

3. Which mobile application do you use for dissemination of information for pension claims processing?
4. How does the use of mobile applications influence dissemination of information for pension claims processing in Jubilee Insurance?
5. How do text messages influence dissemination of information for pension claims processing in Jubilee Insurance?
6. In which ways do you use USSD codes?
7. How does the use of USSD influence dissemination of information for pension claims processing in Jubilee Insurance?
8. How do voice calls influence dissemination of information for pension claims processing in Jubilee Insurance?
9. How does mobile technology benefit both the organization and the clients?

### Appendix III: Data collection Letter



**UNIVERSITY OF NAIROBI  
COLLEGE OF BIOLOGICAL AND PHYSICAL SCIENCES  
SCHOOL OF COMPUTING AND INFORMATICS**

Telephone: 4447870/4444919/4446544  
Telegrams: "Varsity" Nairobi  
Telefax: 254-2-4447870  
Email: [director-sci@uonbi.ac.ke](mailto:director-sci@uonbi.ac.ke)

P.O. Box 30197  
Nairobi  
Kenya

Our Ref: UON/CBPS/SCI/MSC/ITM/2018

7 May 2020

**TO WHOM IT MAY CONCERN**

Dear Sir/Madam


**RE: MAINA GLADYS NYAWIRA: REG. NO. P54/11604/2018**

This is to confirm that the above named is a bona fide student of the University of Nairobi, School of Computing and Informatics.

She is pursuing M.Sc in Information Technology Management course and would like to collect data for her research project entitled: *"The Role of Mobile Technology in Dissemination of Information for Pension Claims Processing"* under the supervision of Prof. Robert O. Oboko.

Any assistance accorded to her will be highly appreciated.

Yours faithfully

  
SCHOOL OF COMPUTING & INFORMATICS  
UNIVERSITY OF NAIROBI  
P. O. Box 30197,  
NAIROBI.  
PROF. ROBERT O. OBOKO  
DIRECTOR  
SCHOOL OF COMPUTING & INFORMATICS

## Appendix IV: Jubilee Insurance Authorization Letter



25<sup>th</sup> August 2020

**UNIVERSITY OF NAIROBI**  
College of Biological and Physical Sciences  
School of Computing and Informatics  
Nairobi, Kenya

**Your Ref: UON/CBPS/SCI/MSC/ITM/2018**

Dear Sir/Madam

**RE: MAINA GLADYS NYAWIRA: STAFF NUMBER: 1642**

This is to confirm that the above named is an employee of Jubilee Insurance. She has permission of Jubilee Insurance to use the available data (secondary) for her research project entitled; *The Role of Mobile Technology in Dissemination of Information for Pensions Claims Processing* to draw conclusions on her study.

The data collected will be for used for academic purposes only at the time of collection and not later. Information will not be shared with any third party.

If you require any additional information, please contact the undersigned.

Kind Regards,

A handwritten signature in blue ink, appearing to read "Sammy Kigo".  
A circular purple stamp with the text "THE JUBILEE INSURANCE CO. OF KENYA LTD." around the perimeter. Inside the circle, it says "P.O. Box 30376", "00100 GPO", and "NAIROBI".

Sammy Kigo

**HUMAN RESOURCE BUSINESS PARTNER**

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Jubilee Life Insurance Limited  
Jubilee Insurance Centre, Wabera Street, Nairobi, P. O. Box 30376 - 00100 Nairobi, Kenya  
Tel: + 254 20 328 1000, Call Centre: +254 709 949 000, Email: talk2us@jubileekeny.com, Website: www.jubileeinsurance.com

Directors: Nizar Juma – Chairman, John Metcalf (British), Karim Jetha, Rose Mwaura, Julius Kipngetch

Regulated by the Insurance Regulatory Authority

A Member of the Association of Kenya Insurers