

# Mobile Technology and Dissemination of Information in the Kenyan Insurance Industry

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## Abstract

It is estimated that only 15 percent of Kenyans have made plans for retirement, and many people fall into poverty once they retire. A 2018 survey by the Unclaimed Property Asset register found that insurance companies hold 25 percent of unclaimed funds with 10 percent belonging to pensioners. This was attributed to a lack of effective information flow between insurance companies and the customers and also between various departments in the insurance companies. Further, there were numerous cases of loss of documents and files and certain files were untraceable in the departments. This paper investigates ways in which mobile technology influences dissemination of information for processing pension claims in the insurance industry. An improvement in dissemination of information for processing of pension claims can carry out a key function in increasing percentage of Kenyans making plans for retirement. The study deployed a descriptive study design. The target population in this study was 561 pensioners in Jubilee Insurance and 8 heads of pensions 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. As a result of the small number of heads of departments, they were not sampled. Through systematic sampling a sample of 288 pensioners was selected from the list of pensioners in Jubilee Insurance. The findings from the study led to a conclusion that mobile application has a positive and significant association with dissemination of information for pension claims processing in Jubilee Insurance. It was further revealed that text messages have a positive and significant influence on dissemination of information. Concerning unstructured supplementary service data (USSD) it was concluded that it 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.

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## Keywords

Mobile Technology, Information, Pension Claims Processing

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## 1. Introduction

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 [1]. 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 [2]. Some countries have not yet developed meaningful pension and retirement savings systems or have not achieved access to these among the broad base of the population. This exposes many elderly 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 [3] 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 [4], mobile technology potentially leads to improvement in information dissemination and hence a take-up of private pensions, 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.

## 2. Literature Review

### Mobile Technology

Mobile technology creates new or modifies existing business processes, culture, and customer experiences to meet changing business and market requirements [5]. 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 [4]. In the insurance industry, mobile technology in the use of mobile applications such as short message services, Unstructured Supplementary Service Data (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, and unstructured supplementary service data and voice calls [6].

### Mobile Applications

[7] defines a mobile application as a “self-contained” mobile phone-based

software that enables a user to perform a specific task. Amalfitano *et al.*, further insinuate that the first mobile phone applications appeared around early 2000 after which there was an exponential increase in such applications leading to the opening of mobile application stores such as the Apple App Store in 2008. [7] also argues that growth of mobile applications has been tremendous since there are several applications being introduced to the market by developers on a daily basis.

The prominence of mobile phone applications has been facilitated by the expanded access to mobile phones in the recent past. Many people have access to mobile phones and many more are still acquiring them. Mobile phones due to the fact that they are portable and have internet connection capabilities, have made it possible for people to change the way they work with regard to place and time.

Adoption of mobile phone applications is not limited to individual users but also to corporate entities. All contemporary business entities require a mobile applications because it makes the businesses more visible to clients any time, allows establishment of a direct marketing link, improvement of customer engagement as well as identifying a business as an innovator.

There are benefits organizations enjoy when they adopt mobile applications. For instance, [8] conducted a study on the development of information dissemination platform by integrating web and android technologies which 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. It was evident that mobile technology eliminated delay and misinformation.

#### **Short Message Services**

Short message services (sms) have become an important component of business organizations today. It is one of the fastest ways of communicating with clients in order to pass critical or urgent information. [9] defines a short message service as a component of most cellular phones that facilitates the exchange of text messages between users who possess mobile phones. In the initial stages of its introduction, sms became popular as a person-to-person medium of exchanging text messages but it is now gaining popularity among business entities as an application to subscriber medium of communicating. Many organizations now use sms to communicate important information as well as use the channel to market their products to their customers [9].

Research that has been carried out reveals that sms is an important tool in communicating with the intended audience. For instance, [10] 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. [11] 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.

#### **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 [12]. 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.

[13] 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 15 or the commercial "Look4it" 16 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.

#### **Voice Calls**

Mobile phone voice calls are considered a very important tool in enhancing business performance. [14] confirms that mobile phone voice calls are very important in business for a number of reasons. Horwood asserts that the first reason is the popularity of mobile phones. Many people now have access to mobile

phones and are always on their phones. The second most important reason is the need for human assistance since there are occasions when customers may not get the assistance they need from online platforms [14].

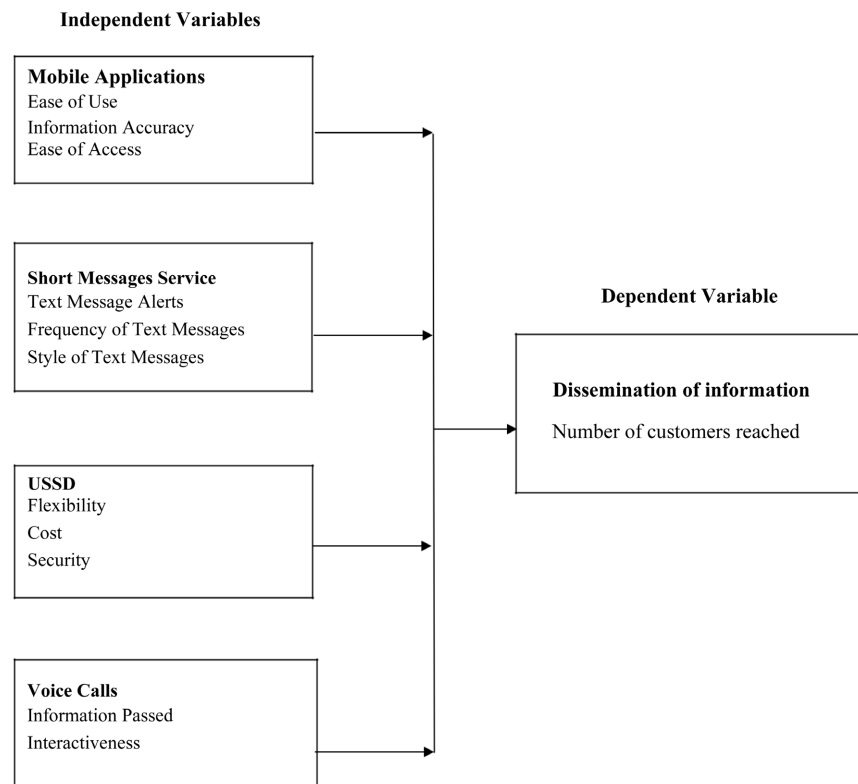
Research has revealed that the use of mobile phone voice calls in a number of countries adds value to business. In a study carried out by [15], which looked at Kerala fishermen, it was found that widespread use of mobile phones voice calls increased the efficiency of markets by decreasing risk and uncertainty, 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 co-ordinate supply and demand, enabling traders and transporters to take advantage of the free flow of price information by catering to demand in undersupplied markets.

In another study by [16], an assessment of voice call-based dissemination of weather and market information in the Upper West Region of Ghana was carried out. The objective was to establish whether contact with agricultural extension agents and farmer-to-farmer extension services significantly influences farmers' decision to patronize mobile phone-based weather and market information. It was established that 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.

[17] conducted a study that assessed the availability and dissemination of information to farmers using voice by public extension agents in Delta state, Nigeria. Data were 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.

### **Conceptual Framework**

We conceptualized the conceptual framework after reviewing various literatures (Figure 1).



**Figure 1.** Conceptual Framework (source: developed by authors).

### 3. Methodology

This investigation 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 [18]. 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 statements as they appear at the present time where the researcher has no power over variable [19].

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. Others were heads of pensions 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.

The sample size in this study was established by use of Krejcie and Morgan sample size determination formula [20]. A representative sample of 238 was arrived at using Krejcie and Morgan sample size determination formula. Since the number of heads of departments was small, they were not be sampled.

The data used in this study was both primary and also secondary data. Primary data was collected using semi-structured questionnaires as well as key informant interviews. On the other hand, secondary data was retrieved from yearly reports of Jubilee Insurance.

Reliability of the research tool was done through pre-testing which took place in Westlands Branch of Jubilee Insurance. Westlands Branch was selected because it houses the contact centre team and its close proximity to the headquarters in the city center. The pre-test was randomly sampled and included 10% of sample size. [21] suggests that 10 percent of sample needed for complete investigation must be utilized in the sample size. On the other validity of the questionnaire was tested.

Cronbach's alpha or coefficient alpha which is employed is 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. Concerning data analysis, both qualitative and quantitative data analysis were applied. Quantitative data was analysed using descriptive statistics such as the mean and standard deviation whereas qualitative data was analyzed using content analysis.

#### 4. Findings

The study sought to achieve four objectives: to establish the extent to which mobile phone applications had been adopted by Jubilee insurance in dissemination of information, to assess the influence of text messages on dissemination of information for pension claims processing in Jubilee Insurance, to investigate the influence of unstructured supplementary service data (USSD) on dissemination of information for pension claims processing in Jubilee Insurance and to assess the influence of voice calls on dissemination of information for pension claims processing in Jubilee Insurance.

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

The respondents were requested to show the extent to which they agree with various variables relating to mobile applications and dissemination of information for pension claims processing in Jubilee Insurance. A scale of 1 - 5 was provided where 1 represented strongly disagree, 2 = disagree, 3 = neutral, 4 = agree and 5 = strongly agree. The data collected was analyzed using the mean and standard deviation as illustrated in **Table 1**.

It was evident that six out of the seven statements above had a mean greater than 3.5 being an indication that majority of the respondents agreed with each one of them. The study therefore revealed that the participating pensioners agreed that: the symbols, icons and name used in the mobile application were appealing; mobile application is time saving and faster since no queuing, they had installed the mobile application developed by Jubilee insurance in their phones; they have learned to use the application without any written instruction and help; information in the mobile applications is the same as that in firm website and that Jubilee insurance has developed a mobile application. However,

majority of the participants disagreed with the statement that they get all updates on pension claims processing through the mobile application.

### Text Messages

The second objective of the study was to assess the influence of text messages on dissemination of information for pension claims processing in Jubilee Insurance. The participants were required to indicate the extent to which they agreed with each of the statements relating to mobile phone text messages using the scale 1 - 5 where 1 represented strongly disagree, 2 = disagree, 3 = neutral, 4 = agree and 5 = strongly agree. The results are presented in **Table 2**.

**Table 1.** Mobile applications and dissemination of information.

	Mean	Std. Deviation
The symbols, icons and name used in the mobile application are appealing.	3.984	0.116
Mobile application is time saving and faster since no queuing.	3.943	0.967
I have installed the mobile application developed by Jubilee Insurance in my phone.	3.924	0.363
I learned to use the application without any written instruction and help.	3.836	0.268
Information in the mobile applications is the same as that in firm website.	3.828	0.338
Jubilee Insurance has developed mobile application.	3.645	0.430
I get all updates on pension claims processing through the mobile application.	2.450	0.391
Valid N (listwise).		

**Table 2.** Influence of text messages on dissemination of information.

	Mean	Std. Deviation
Jubilee insurance uses specific Key words in their text messages.	4.258	0.998
I rely on the text messages send by Jubilee insurance for updates.	3.928	0.237
Jubilee insurance sends text messages on regular basis.	3.905	0.022
I do receive text messages from Jubilee insurance.	3.886	1.063
Text messages sent by Jubilee insurance are simple to understand.	3.878	0.197
In every transaction, I receive a text message notification.	3.763	0.180
I have never received any text message from Jubilee insurance.	2.428	0.244
Jubilee insurance sends mobile text alerts on pensions claims processing.	2.311	0.220
Valid N (listwise).		



The research findings revealed that a total of six statements relating to the extent of adoption of mobile text messages had a mean between 3.763 and 4.258. This was a confirmation that majority of the respondents agreed that: Jubilee insurance uses specific Key words in their text messages; they I rely on the text messages send by Jubilee insurance for updates; Jubilee insurance sends text messages on regular basis; they I do receive text messages from Jubilee insurance; text messages sent by Jubilee insurance are simple to understand and that they receive text message notification for every transaction. However, the participants disagreed with two statements that: they I have never received any text message from Jubilee insurance and that Jubilee insurance sends mobile text alerts on pensions claims processing. It was therefore evident that mobile phone text messages are being used widely used by Jubilee insurance to disseminate information to the clients. The mobile text messages were therefore found to be an effective way of passing important information to the clients of Jubilee insurance.

#### Unstructured Supplementary Service Data

The third objective of the study was to establish the influence of unstructured supplementary service data (USSD) on dissemination of information for pension claims processing in Jubilee Insurance. The respondents were provided with statements depicting the adoption of USSD in dissemination of information by Jubilee Insurance. In each of the statements they were to indicate the extent to which they agreed with each one of them using a scale of 1 - 5 where 1 represented strongly disagree, 2 = disagree, 3 = neutral, 4 = agree and 5 = strongly agree. The responses were analyzed using descriptive statistics *i.e.*, the mean and standard deviation as illustrated in **Table 3**.

**Table 3.** Unstructured Supplementary Service Data (USSD).

	Mean	Std. Deviation
I receive instant feedback without relying on the internet.	4.065	0.168
I prefer USSD messages as compared to other forms of information dissemination.	3.855	0.248
USSD codes offer a two-way data exchange for real time connection.	3.832	0.172
USSD codes are accessible over any mobile regardless of sophistication/affordability.	3.813	0.075
USSD provide handset independent solutions and is highly effective.	3.741	0.444
USSD codes are faster as compared to short messaging service (sms).	3.691	0.079
USSD offers convenience and secure services.	3.607	0.337
I receive USSD messages from Jubilee on pension claims and processing.	2.027	0.255
Valid N (listwise).		

The research findings as presented in the table above indicate that Unstructured Supplementary Service Data is very popular in dissemination of information to the clients of Jubilee insurance. This was evident from the mean scores of eight statements which were above 3.5 an indication that the participants had agreed with them. These include: receiving of instant feedback without relying on the internet with a mean of 4.065, Jubilee insurance sends USSD messages to all its clients with mean of 3.855, preference for USSD messages as compared to other forms of information dissemination with mean of 3.855, USSD codes offer a two-way data exchange for real time connection with mean of 3.832, USSD codes are accessible over any mobile regardless of sophistication/affordability which had a mean of 3.813, USSD provide handset independent solutions and is highly effective with a mean of 3.741, USSD codes are faster as compared to short messaging service (sms) with mean of 3.691 and USSD offers convenience and secure services with mean of 3.607. However, there was consistency in responses relating use of USSD and other mobile applications in disseminating information of pension claims and processing. This had a mean of 2.027 an indication that the participants disagreed.

#### 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. The respondents were provided with statements relating to extent of adoption of voice calls in dissemination of information by Jubilee Insurance. In each of the statements they were to indicate the extent to which they agreed with each one of them using a scale of 1 - 5 where 1 represented strongly disagree, 2 = disagree, 3 = neutral, 4 = agree and 5 = strongly agree. The responses were analyzed using descriptive statistics *i.e.*, the mean and standard deviation as illustrated in **Table 4**.

**Table 4.** Influence of voice calls on dissemination of information.

	Mean	Std. Deviation
When I have queries, I always call the jubilee insurance customer care.	4.218	0.149
Am satisfied with the help I get whenever I call Jubilee insurance customer care.	4.046	0.225
Jubilee clients are reached by interactive voice calls to pass vital information.	4.008	0.161
Jubilee insurance calls its clients to update them on the current happenings.	4.008	0.161
I have never received a call from Jubilee insurance.	2.437	0.188
The jubilee customer care direct line is always busy.	2.431	0.221
I receive update calls concerning pension claim processing.	2.386	0.118
Valid N (listwise).		

The findings on the use of mobile phone voice calls to disseminate information by Jubilee insurance revealed majority of the respondents agreeing that Jubilee insurance has adopted this application in the following ways: in addressing queries from customers who opt to make voice calls (mean = 4.218), Assisting customers who call the Jubilee customer care center (mean = 4.046), to reach out to clients through interactive voice calls to pass information which is important to the clients (mean = 4.008) and calling clients in order to update them on any current happenings (mean = 4.008). The results further established that the respondents disagreed with the following statements relating to the use of voice calls by Jubilee insurance to disseminate information: Majority of the respondents disagreed with the statement that they have never received a call from Jubilee as evidenced by a mean of 2.437, majority of the respondents also disagreed with the statement that the Jubilee customer care is always busy as reflected by a mean of 2.431. This was a confirmation that the Jubilee customer care line was not busy to an extent that a customer could not be able to get assistance. Lastly the participants in the survey disagreed with the statement receiving phone calls concerning pension claim processing as evidenced by a mean of 2.386.

#### **Relationship between Mobile Technology and Dissemination of Information**

In order to ascertain the relationship between mobile technology and dissemination of information, a regression analysis was conducted. The independent variables of the study were: mobile applications, short message service (sms), Unstructured Supplementary Service Data (USSD) and voice calls to disseminate information. The dependent variable of the study was dissemination of information which was measured through the number of customers that were reached through mobile phone technology. For the independent variables the mean responses from the questionnaires were used to conduct the regression analysis. The regression results are presented and explained in **Table 5**.

The results illustrated in the model summary table above reveal that the adjusted coefficient of determination (Adjusted R Square) value is 73.2 percent. This is an indication that 73.2% of the variance on dissemination of information by Jubilee insurance can be explained by the four independent variables *i.e.*, short message service, Unstructured Supplementary Service Data, mobile applications and voice calls. The remaining 26.8 percent of the variance is attributed to variables that were not part of this study. Therefore, dissemination of information to Jubilee insurance clients largely depends on adoption of mobile phone technologies by the firm (**Table 6**).

**Table 5.** Model summary.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.885 <sup>a</sup>	0.783	0.732 (73.2%)	0.711

a. Predictors: (Constant), voice calls, Unstructured Supplementary Service Data (USSD), mobile applications, text messages.

**Table 6.** Analysis of variance.

	Model	Sum of Squares	df	Mean Square	F	Sig.
	Regression	303.222	4	75.806	83.921	0.000 <sup>b</sup>
1	Residual	6.875	257	0.027		
	Total	310.097	261			

a. Dependent variable: dissemination of information. b. Predictors: (Constant), voice calls, Unstructured Supplementary Service Data (USSD), mobile applications, text messages.

The results on variance analysis presented in the table above reveal that the relationship between mobile phone technology and dissemination of information to Jubilee clients is a significant one. Since the test was run at 0.05 significance level and the value from the table is 0.000 which is below 0.05, it suffices to say that the study established the existence of a statistically significant relationship between adoption of mobile phone technology and dissemination of information at Jubilee insurance.

## 5. Conclusion

Mobile phone technology has become very popular among many companies across the globe. This is attributed to the expanded use and access to cell phones by many people. In the case of Jubilee insurance, mobile phone technology seems to play an important role in disseminating information to its clients. It was confirmed that mobile application easy access, simplicity and usability influences dissemination of information. This was an indication that improvement in mobile application easy access, simplicity and usability leads to improvement in dissemination of information for pension claims processing in Jubilee Insurance. In addition, text messages have a positive and significant influence on dissemination of information for pension claims processing in Jubilee Insurance. The style of messages and frequency of text messages forms of texting influence information dissemination. Voice calls and USSD were also found to have a significant influence on dissemination of information. In general, the relationship between adoption of mobile phone technology and dissemination of information is one that cannot be ignored by any business entity in this age.

## Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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