EFFECT OF TECHNOLOGY ON THE PERFORMANCE OF INSURANCE COMPANIES IN KENYA

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DECLARATION

I declare that this research report is my original work and has never been submitted to any institution or organization for academic or any other purpose.

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DEDICATION

I dedicate this work to my wife Janet, my children Joshua, Caleb and Moses, my parents and lecturers for their encouragement and support.

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ABSTRACT

The objective of this study was to determine the effect of technology on performance in insurance companies in Kenya. The study was anchored on the resource dependence theory and the resource-based view. The descriptive cross-sectional survey design was used in the study. The population comprised of all insurance companies in Kenya. There were 54 registered insurance companies in Kenya as at 31st Dec 2019 according to IRA. Data collection was by use of a questionnaire which was administered to the marketing manager of each company or equivalent manager who was thought to be a custodian of relevant information relating to the study. Data collected was analyzed and summarized using mean and standard deviation. Further testing was done by use of regression analysis to establish the relationship between technology and performance. The study found that application of technology leads to enhanced performance whereby document management systems is the most widely used technology process (Mean= 4.856). This is probably explained by the fact that all the other processes are premised on document management. Customer management systems, business process management systems and financial management systems were also indicated to be highly used by insurance companies. The analysis of variance indicates that the relationship between application of technology on performance is statistically significant (P Value is less than 0.05). The conclusion is that increasing application of technology leads to enhanced performance. It is recommended that longitudinal studies be carried out on the effect of technology on performance. It is also recommended that a similar study be designed within the context of manufacturing environments.

ABBREVIATION & ACRONYMS

IRA   – Insurance Regulatory Authority

AI   – Artificial Intelligence

MBO   – Management by Objectives

GOP   – Gross Domestic Product

ERS   – Electronic Registration Systems

GPS   – Geographical Positioning System

ICT   – Information Communication Technology

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CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

Technology assumes a very broad spectrum which touches on every aspect of the business. The emergence of artificial intelligence (AI) and big data mining has greatly impacted on the performance of market from seller oriented to buyer oriented (Kurtz & Koone 2009) AI and big data obtained through technology generate detailed information about customers, products needs and preference (Gelernter, 2016). Technology improves business processes to increase efficiency and effective allocation and utilization of resources. Development in technology like skills, knowledge, computers, systems and social media helps in customer's relations development. It has been argued that these new forms of technology have greatly changed the media landscape and performance of organizations (Jain, 2017). Technology is one of the functional strategies of the company that collectively make up the business strategy (Isoraite, 2009). Kotler (2000) explains that performance is an accomplishment of an objective as by set standards. It comprises actual output measured against intended output (Richard et al., 2009). Intended output is measured by use of performance indicators, organizational performance is measured using performance indicators like reliability, efficiency, productivity, profitability, adaptability, innovativeness and customer satisfaction. Performance measurement is done by the following method: graphic rating scale, self-evaluation, management by objectives, customer feedback and use of checklist.

The study is anchored on resource dependence theory and resource based review. The resource based view (Penrose, 1959) holds that firms control resources that may be used for purposes of enhancing performance. However, it is noted that what may

constitute a resource in one firm may not be a resource in another. The central proposition of the theory is to achieve competitive advantage, by acquiring and enjoying resources that are rare, inimitable and not substitutable resources (Barney, 1991). The resource dependence theory (Pfeffer & Salancik, 1978) holds that to understand the behavior of organizations one must first seek to understand the context within which that behavior is exercised. The argument is that the actions of a company are a function of that company's environment.

The financial service industry in Kenya is considered one of the most vibrant in Africa. This statement is attested by the high number of insurance companies in Kenya (54 according to the Insurance regulatory registration portal, 2019). Together with commercial banks, insurance companies form the bedrock of the financial services sector of any economy. The centrality of the insurance companies to the Kenyan economy is confirmed by the role the government expects it to play in the achievement of Vision 2030. The advances in technology locally and globally have had implications for the performance of several business activities marketing included. Technology has been reported to influence the marketing activities of companies.

1.1.1 Concept of Technology

Technology can be defined as a software and hardware used to make work easier, the software are systems, processes, skills, knowledge, experience and the hardware are equipment and machines. According to Hughes (2004) technology is skills, knowledge, systems in organizations used to produce goods and services. This definition leans more on the essence of technology which is problem solving.

McDonald and Meldrum as well as Kerinet (2006) argue that technology enhances customer's relationships, customer loyalty, commitment, satisfaction by attracting new customers and retention. This is achieved through speed, convenience and efficient service delivery in underwriting, claims processes and procedures, customer complaints, advertising and sales promotion which enhances organizational performance thus results in increase in market share and profitability. According to Sungadhi (2008) technology enhances performance in customer relations management in terms of reliability, efficient customer feedback, monitoring processes and data analysis. Lovelock et al (2004) argues that technology enhances performance in positioning a firm by creating positive relationships and network with customers, suppliers, media and consumers. Kerinet (2006) argues that technology enhances development of sustainable environment through awareness and accessibility to information which enables companies make positive contributions and be socially responsible to the environment.

Mokyr (1990) argues that technology development is the acquisition of new skills, knowledge and systems to improve performance in production, which would be achieved by efficient and effective allocation and utilization of resources used in production. This definition focuses on the benefits of technology. The emphasis is on the fact that application of technology is meant to reduce the costs of performing a given task, in a more comprehensive way. It can also be explained as a combination of techniques and implements, which are software and hardware. This definition is broader and accommodates both hardware and software as adopted for the purposes of this study. According to Moore (2012) this are systems, processes, knowledge, skills and experiences which are the software and machines, equipment's which are the hardware. Effective implementation of technology use will enable organizations to

perform effectively and efficiently in maximizing available resources hence high production with quality products and services which leads to increase in market share, profits, customer retention and satisfaction. (Reddy &Zimmerman, 2004).

1.1.2 Firm Performance

Performance is a process where an individual or organization aims at accomplishing set goals and objectives at a given time. It can also be defined as a process a firm can use to manage its resources to gain competitive advantage to its competitors. According to Richard et al. (2009) performance is a measurement of actual output of an organization against the intended output as set by the organization based on resources available. This study was based on the organization production process and not service industry. The concept of performance is connected to organizational productivity, profitability, efficient allocation and the utilization of resources and reduced cost of production with high quality goods. (Schendel & Hoffer 1979), (Staw 1986) performance of any organization is an integral part of strategic plan of the organization as it drives it in efficient and effective utilization of resources in service delivery to the convenience and timely service delivery with new customers acquisition, retention and satisfaction (Kalloldaz 2004).

Organizational performance is measured by organization productivity, profitability, employee skills and experience, invention and innovation of employees and customer satisfaction. Performance measurement is a process of analyzing collected data against set standard to produce performance of an organization. It can be measured by use of graphic rating scales, evaluation of employees by appraisal, use of management by objectives (MBO) where managers have review of monthly or quarterly on objectives set, feedback and customer complaint. Effective implementation of organization strategic plan will enhance performance by maximizing available

resources to have mass production of goods and services of a high quality at low cost which enables organization to increase markets share, profits, retention and customer satisfaction.

Performance measurement would be effective when there is efficient and effective feedback mechanism in place. Technology has enabled organization to have timely feedback and response to customer needs, as to the change in environment which has become customer centered and global as customers have personalized access to information for comparison. (Kotler & Keller 2000; Kurtz & Koone 2000). Wesner and Fawlet (1991) argues that performance defines a firms mission by identifying its objectives and maximizing resources available in terms of production, invention and innovation to produce high quality goods which leads to increase in markets share, profits and customer satisfaction.

Kaplan and Norton (2000) argue that organization performance would be influenced by environmental forces which affects its operations and acquisition of resources. The forces relates to internal and external forces. They include organization structure and strategy, government policy and regulation, demographic environment, economic forces technological forces and sustainability to environment.

Kenya's insurance performance is at 2.83 percent in terms of penetration despite its GDP being at 46 percent. There is need to tap innovation in technology to enhance performance as market has become consumers centered due to access of information in a personalized convenient and timely manner (Kurtz& Kooner 2009).

1.1.3 Insurance Companies in Kenya

Insurance companies together with commercial banks and the micro finance firms make up the finance sector in Kenya. Insurance business in any economy is deemed

essential for economic growth. Indeed without a vibrant insurance industry, it is very difficult for the economy to grow at the desired levels because of high levels of risk exposure. It also acts as a risk absorber hence investors are assured of their security to their investment. Risk managers help in risk identification, advice in risk prevention measures and cover required. The covers can be placed by intermediaries or direct. When loss has occurred investigators, assessors, loss adjusters, surveyors and brokers help in claim processing and settlement. All the above are regulated by insurance regulatory authority who are mandated by law to regulate, authorize and supervise their activities to protect consumers. According to the regulator, there were a total of 54 licensed insurance companies as at December 2019. A majority of these insurers carry the same lines of business like life, general and medical.

1.2 Research Problem

Technology has been found to influence the performance of enterprises (Steinmueller, 2001). Derozier (2003) noted that the rapid change in technology, accessibility, availability and their use has changed the organizations systems and processes which has impacted the performance of most businesses through product development, research , positioning, segmentation, targeting , pricing , distribution and communication approaches (Khalil & Harcar 1999). The application of technology by a firm in the performance of these business functions have been reported to influence performance.

Kenya is one of the few countries in the world that are over served in the financial sector with 41 banks and 54 insurance companies. This means that the level of competition is quite high. It has also been noted that the rate of adoption of technology and especially communication technology is among the highest in Africa.

This adoption of technology by the masses has implied that insurance companies have to adjust from seller centered perspective to buyer centered as the customers are determining the performance of companies (Brady et al., 2008). Insurance companies in Kenya use technology for new product conception, marketing, communication and settling of claims including customer relationship management. The IRA also uses electronic registration systems (ERS) to ease registration and issuance of registration certificates to Insurance companies and intermediaries to ensure consumers are protected and only professionals are offering requires services

Studies that explain the relationship between technology and marketing reveal contextual, conceptual and methodological gaps. Bett (2012) examined the adoption of GPS tracking technology in the motor vehicle insurance sector in Kenya. His finding were GPS has positive impact as it reduced incidences of theft however his study didn't cover impact of technology in insurance as whole but only on motor tracking. Francichini (2015) studied the benefits of business operation management tools in Brazil insurance companies. It was concluded that it was the fastest growing segment and it needed improvements in its processes in operation for it to remain competitive in global market. The study covered the performance of operation. However this study did not conclude on the effect of technology use in insurance as a whole and the study being in a developed country whose findings would not match in the local environment. Maragia (2016) studied the adaptation of e-marketing strategies by insurance companies in Kenya. The study centered on technological factors, organizational factors and environmental factors. The findings reported that technology has a positive influence on e-market strategies. The study sought to determine the effect of technology on performance of insurance companies in Kenya

by answering the question; what is the effect of technology on the performance of insurance companies in Kenya?

1.3 Research Objective

The objective of this study was to determine effect of technology on the performance of insurance companies in Kenya

1.4 Value of the Study

This study will be useful to companies in the financial industry in Kenya and beyond. The findings will enable organizations to develop strategies and systems in operations, new products development, penetration and efficient allocation and utilization of resources to enhance performance. Managers will be able to make decisions on how to manipulate technology to enhance performance.

The study will contribute to theory because scholars of marketing will use the findings to explain the relationship between performance and technology from the perspective of financial institutions. The researcher will also seek to test the postulations of the resource dependence theories and the resource based view in the insurance industry in this study.

Policy makers such as the Insurance Regulation Authority (IRA) will benefit from the findings because they will understand from an empirical perspective when formulating policy on the industry whose environment is changing rapidly.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This section would introduce relevant theories the study would be anchored in literature review available on technology and performance.

2.2. Theoretical framework

The study would be based on resource dependence theory and resource based views as explained below.

2.2.1 Resource Dependence Theory

The theory can be traced to Preffer and Salancik (1978). It holds that organization held resources to sustain their existence. These resources would be obtained from their own environment where there are other organizations who need the same resources. Organizations have to develop strategies so that they can acquire the resources from the environment to remain in the market, the strategies and equipment should be superior to their competitors. (Fink et al, 2006). Organization skill, knowledge and equipment used will provide competitive advantage (Barney 1991). Due to the rapid change of market trends, customer behaviors, technology, and globalization of the economy, environment always lack enough resources to satisfy their customers. This is in terms of knowledge and skills in manpower, equipment, market intelligence which makes them to have to depend on other organizations in sharing the resources in the environment (Katila, Rosenberger, & Eisenhrdt, 2008). Because of the rapid change of environment and consumer behavior due to globalization of the economy and change of technology there is need to continue

monitoring opportunities and threats which are created by market dynamics to ensure flow of resources are maintained. (Gosling & Mintzberg, 2003). Organization seeks to utilize this opportunities to decrease uncertainty and manage their dependence by creating global relationships and business links with other businesses (Salam Ali & Seny Kan 2017).

2.2.2 Resource Based View

The theory is associated with Penrose (1959), it postulates that competitive advantage can be derived from the resources of the firm. Resources are viewed as firm resources to the extent that they are valuable, rare and cannot be imitated. These resources can be tangible or intangible. The resource based thinking gained popularity in the 1990 which made researchers shift their focus from industry resources to specific firms' resources (Spanos & Lioukas 2001). Wenerfelt and Rumelt (1984) as well as Barney (1986) emphasized on the importance of the theory as it creates sustainable competitive advantage on organizations by having unique and inimitable resources.

The central premise of the resource-based view is that firms compete on resources based on the resources available and capabilities (Peteraf & Barney 2003). The resource-based view looks at the firms and market conditions that can cause sustainable competitive advantage to the firm holding all external environments constant (Peteraf & Barney 2003). The theory assumes that organizations have unique, and inimitable resources from competitors like machines, equipment, systems, employee skills and knowledge which need to be protected, however this assumption is not really in insurance companies as companies share resources in terms of intelligence, agents and claim investigators and risk surveyors.

2.3 Empirical Review and Knowledge Gaps

Studies on the effects of technology on insurance companies show that it has a positive effect. Some technologies increase efficiency in service delivery in terms of cost and time. Technologies have been noted to enhance organization performance in research in new products development, increase products life cycle, increase speed of service delivery and reduce cost of production. (Schnitt 2017). Lee and O'Conner (2003) studied the relationship between information communication technology and launching of new products with innovativeness as a modelling variable. They reported that innovativeness moderates the relationship between communication technology and launching of new products. Studies on the relationship between technology and performance generally abound (Minor & Hensley, 1994; Jusah & Parnell, 2008; Parnell & Harshley, 2005).These studies provided mixed conclusions on the relationship between these two (Parnell & Harshley 2005).

Alghamadi and Bach (2014) studied the influence of technology on marketing strategies. The study used secondary data and primary data on the implementation of technology in marketing strategies. The study finding was that technology use on advertising was positive as it increased efficiency, convenience, reliability of the message to intended target recipient. It also helped in positioning organizational products in target markets by segmenting the market according to products demand, brand preference and differentiation.

According to Jarvis (2002) he did a study on consumer, competitors and brands using two methods. The traditional method and by use of technology. His findings were response rate by use of technology was high as compared to traditional method, cost of research was low by use of technology and this response rate was high when

technology was used as compared to traditional method where there was fear on use of private data obtained

Moore (2012) did a study on millennium consumers. The findings of the report showed that millennium consumers have access to technology, use global brands and travel globally. The study showed they use technology to connect to market goods and services. They are inquisitive as they search on the product performance, source quality and price by comparing its offering by competitors in the market. The study showed they use technology in making purchase orders, making payments and delivering of the same through technology without specifically going to the market. It was noted that technology has changed the market from being seller oriented to buyer oriented as customers have all relevant information about the market and products offered in the market. It increased efficiency and effectiveness in resource allocation and utilization which reduced cost of production hence increase in profit and competition in the market. It enables customers to get reliable information at their convenient time about products or brand. Sherman (2001) did a study on the effect of search engines to business. His findings were, they help in identifying new customers and retaining existing customers as they can include the company profile in their advertising site list so as they can check out on their new products announcements and services. However according to sands (2003) this would not give positive response always as first time customers have mistrust on technology due to fraud and misuse of private data.

Hamidi and Safabakhish (2011) did a study on effect of technology on marketing. Secondary data was obtained from financial statements which showed technology influence organizational performance in terms of resource allocation and utilization,

reduced cost of production and increased speed of delivery. It also created sustainable environment through reduction on pollution reduction of clutter in advertisement. Hossseini, Mohammadi and Safari (2018) did a study on effect of technology on advertisement using 200 marketing experts of information technology. Structural modeling equations were used to analyses data. The results showed that IT had positive impact on marketing mix as it reduced cost of advertising, clutter, and was reliable and convenient as it goes direct to intended recipient

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The chapter provides broad plan of action and design of study, the population under investigation, data collection and analysis

3.2 Research Design

Creswell (2007) defines a research design as a process that represents the views and beliefs of the researcher on the intended study. The current study was a descriptive cross sectional survey. Cross sectional surveys enabled the collection of information at only one point in time. It sought to establish the manifestation of phenomena which was descriptive in nature. Descriptive cross sectional survey was chosen because it enabled findings from each respondent of the 54 companies to be analyzed in the same manner. The study adopted the census survey design since the number of respondents was such that sampling was not statistically feasible.

3.3 Population of Study

According to Mugenda and Mugenda (2003), argue that a population of study comprises of individuals, objects of similar characteristics in a study. The population comprised of all insurance companies in Kenya. There were 54 registered insurance companies in Kenya as at 31st Dec 2019 according to IRA. These insurance companies underwrite general, life and health insurance lines. Twenty three (23) of these offer long term policies, five (5) offer re-insurance services and the twenty six (26) of these offers short term policies.

3.4 Data Collection

Data collection was by use of a questionnaire which was administered to marketing manager of each company or equivalent manager who was thought to be a custodian of relevant information relating to the study. Marketing managers were used as respondents as they were believed to have all relevant information to the study. The questionnaire was made up of three parts. Part A captured demographic data part B captured data on technology and part C captured data on organizational performance. The drop and pick later method of administration was used to give marketing managers ample time to fill them. Follow-up was made through calls and emails to remind the respondents about the questionnaire and ensure they were filled. Pilot administration of questionnaire was done to test its validity and consistency of responses from the respondents.

3.5 Data Analysis

In this study a questionnaire was used in rating the responses that were given by respondents. Completed questionnaires were checked for accuracy, errors and omission by respondents, since the study was quantitative research, quantitative method was used to analyze data. According to Van Der Merwe (1996), as well as Munyoki & Mulwa (2012) argue that quantitative research is a research where quantifiable data was used to investigate the relationship between phenomena and variables, expected outcomes and facts. Data collected was analyzed and summarized using mean and standard deviation. Further testing was done by use of regression analysis to establish the relationship between technology and performance.

The regression model was proposed as follows;

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + e$$

Where

Y = Performance

X_1 = Process

X_2 = Technological Skills

X_3 = Knowledge

X_4 = Technological Hardware

E = Error term

B_1 to B_4 = Regression coefficients

α – Model constant

CHAPTER FOUR: DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1 Introduction

In this chapter, data collected is analyzed and presented, findings shown and a discussion made. Data is first analyzed using descriptive statistics including the mean and standard deviation. Inferential statistics follow to establish the relationship between the independent and the dependent variable of the study.

4.2 Response Rate

The population of the study comprised of all 54 registered insurance companies in Kenya. Questionnaires were therefore administered to all the 54 companies. Out of this total number, 45 questionnaires were filled and returned. This represented a response rate of 83.3 %. Out of the questionnaires completed and returned, 5 of them were incomplete and therefore could not qualify for further processing. For purposes of the analysis therefore, 40 questionnaires were used. This number was deemed sufficient for further statistical manipulation.

4.3 Demographics of the Respondent institutions

This part of the questionnaire was meant to collect data on demographic variables of the respondent insurance companies. Data on variables such as age of the firm and number of employees was collected. Hereunder are the findings;

4.3.1 Number of Employees

This question was meant to establish the size of the insurance company. The findings are as follows.

Table 4.1: Number of Employees

Number of Employees	No. of Insurance Companies	Percentage
Below 50 employees	0	0 %
51-99 employees	2	5 %
100-149 employees	4	10 %
150-199 employees	8	20 %
Over 200 employees	26	65 %
Total	40	100 %

Source: Research Data, 2020

According to Table 4.1, six (15%) of the insurance companies interviewed had less than 150 employees. Eight companies (8) had between 150 and 199 employees while a majority (65 %) indicated that they had more than 200 employees.

4.3.2 Age of the Insurance Company

This question was meant to establish the number of years the insurer has been in operation. The age of an institution has been reported to be correlated to the marketing practices it engages in (Owino, 2014).

Table 4.2: Age of the respondent Institution

Age	No. of Insurance companies	Percentage	Cumulative Percentage
6-10 Years	2	5 %	5 %
11-15 Years	5	12.5 %	17.5 %
16-20 Years	6	15 %	32.5 %
Over 20 Years	27	67.5 %	100 %
Total	**40**	**100 %**	

Source: Research Data, 2020

Table 4.2 shows that only 5 % of the respondents were ten years old. The Table further shows that companies aged between 11 and 20 years represented 27. 5 % of the respondents. A majority (67.5 %) of the respondents indicated that they were aged over 20 years.

4.4 Descriptive Statistics

Descriptive statistics including the mean and standard deviation were computed to establish the manifestation of the variables. Technology was the independent variable in this study. Data was collected on the indicators of technology namely; process, skills and experience, technological hardware and knowledge. The results are as follows;

4.4.1 Process

Respondents were required to indicate on a scale of 1- 5 the extent to which the statements provided applied to their firm. The findings are provided in Table 4. 3

Table 4.3 Process

Statement	Mean	Std. Dev
Business process management systems	4.450	0.145
Customer management systems	4.680	0.109
Financial management systems	4.478	0.087
Human resource management systems	3.564	0.067
Document management systems	4.856	0.134
Intelligence management systems	2.646	0.342

Source; Research Data, 2020

According to Table 4.3 document management systems is the most widely used technology process (Mean= 4.856). This is probably explained by the fact that all the other processes are premised on document management. Customer management systems, business process management systems and financial management systems were also indicated to be highly used by insurance companies (Mean above 4. 400). Human resource systems and intelligence management systems were indicated to be used to a lesser extent compared to the rest of the processes (Mean below 3.600).

4.4.2: Skills and Experience

Respondents were required to indicate the extent to which the skills and experiences provided were applied in their organization. The following are the results;

Table. 4.4 Skills and Experience

Statement	Mean	Std. Dev
We use services of experts in technology	4.000	0.056
We offer periodical training on technology	4.589	0.654
Ensure employees are conversant with modern technology	4.756	0.032
We employ on the basis of relevant experience	3.132	0.108
The skills of our employees are updated continuously	4.231	0.076
We benchmark with international best practices in technological skills	3.435	0.453

Source: Research Data, 2020

Data presented in Table 4.4 shows that nearly all insurance companies ensure that their employees are conversant with modern technology (Mean=4.756). Similarly, most companies indicated that they ensure that their employees are continually updated on modern technology (Mean=4.231) and use services of experts in technology (Mean= 4.000). Employment of persons with relevant experience was the least considered (Mean= 3.132). This may be explained by the fact that right persons with no relevant experience may be employed and taught on the job.

4.4.3: Technological Hardware

Respondents were required to indicate the extent to which the organization used the technologies provided on a scale of 1-5. The responses are presented in Table 4.5.

Table 4.5: **Technological Hardware**

Statement	Mean	Std. Dev
Use computers	4.870	0.006
Use laptops	4.789	0.056
Use phones	4.980	0.675
Use trackers	3.245	0.545
Use projectors	2.324	0.076
Use Geographical positioning systems (GPS)	3.453	0.078

Source: Research Data, 2020

Table 4.5 on technological hardware shows that nearly all respondent organizations used technology hardware such as computers (Mean=4.870), laptops (Mean= 4.789) and phones (Mean = 4.980) in their marketing programs at one point or another. Use of trackers, GPS and projectors was moderate (Mean= below 3.5). From the data, it can be concluded that most insurance companies appear to be using technology hardware to a fairly large extent

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4.4.4 Knowledge

This part sought to establish the extent to which respondents agreed with the statements provided which were attributable to knowledge.

Table 4.6: Knowledge

STATEMENT	Mean	Std. Dev
Employ staff who are knowledgeable in technology	4.675	0.078
customer orientation using technology	4.092	0.142
Perform periodical review on technology	4.000	0.067
Encourage use of artificial intelligence	4.010	0.786
Offer internal training on technology	4.789	0.089

Source: Research Data, 2020

Table 4.6 indicates that all statements on knowledge were highly supported (Mean= 4.000 and above). The statement on whether insurance firms offer internal training on technology was the most supported (Mean=4.789). Employment of staff who are knowledgeable in technology was also considered important (Mean= 4.675). The statements on customer orientation using technology and use of artificial intelligence were equally well supported.

4.4.5 Performance

This section was meant to collect data on organizational performance. Respondents were required to show the extent to which they agreed with the statements on performance provided.

Table 4.7: Performance

Statement	Mean	Std. Dev
Our revenues have increased	3.654	0.078
We have experienced an Increase in market share	4.782	0.548
Reduction on cost of operations	4.058	0.065
Improved employee performance	4.001	0.085
Expansion of new markets	4.324	0.049

Source: Research Data, 2020

According to Table 4.7 the respondent companies have registered an increase in market shares (Mean= 4.782). Respondents also indicated a significant increase in their capacity to expand into new markets (Mean= 4.324) and enhanced employee performance (Mean=4.001). It was indicated that respondents had registered reduced costs of operations (Mean=4.058).

4.5 Regression Analysis

Simple regression analysis was performed to determine the relationship between technology and performance of insurance companies in Kenya. The regression results are presented as follows.

Table 4.8: Regression Model

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.672[a]	.452	.414	.3741

Predictors: (constant) Process, Technological Skills, Knowledge and Technological Hardware

According to Table 4.8, the predictor variables explain 45.2 % of the dependent variable ($R^2 = 0.452$). This means that the predictor variables are fairly good predictors of the dependent variable. The remaining 54.8 % is explained by variables outside the predictor variables.

Table 4.9: ANOVA Table

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.746	4	1.766	12.667	.002[b]
	Residual	4.564	36	.163		
	Total	**9.310**	**40**			

a. Dependent Variable: Performance of Insurance Companies

Table 4.9 on the analysis of variance indicates that the relationship between the independent variable and the dependent variable is statistically significant (P Value is less than 0.05).

Table 4.10: Beta Coefficients

	Un-standardized Coefficients		Standardized Coefficients		
Model	B	Std. Error	Beta	t	Sign
(Constant)	3.001	0.776			
PRO	2.006	0.765	1.787	3.990	0.01
0.01					
TSK	0.675	0.321	0.940	2.997	0.02
0.02					
KNO	0.789	0.342	0.446	1.094	0.04
0.04					
THDRE	0.387	0.387	0.768	0.154	0.04
0.04					

a. Dependent Variable: Performance of Insurance companies

Table 4.10 provides the beta coefficients which represent the co-efficients to the predictor variables. All the predictor variables have statistically significant effect on the dependent variable individually (P values of less than 0.05). The resultant equation from these beta variables will be as follows:

$Y = 3.001 + 1.79 X_1 + 0.94 X_2 + 0.45 X_3 + 0.77 X_4$

Where

Y= Performance

X_1= Process

X_2= Technological Skills

X_3= Knowledge

X_4= Technology Hardware

From the analysis the coefficients indicates process as the most powerful technological sub-variable (1.79). This can be explained as all organization systems are promised on processes. The second most impactful sub-variable is technological hardware at (0.94) followed with technological skills at (0.77). The list is knowledge at (0.45) which can be explained as to why organization are not considering technological knowledge experience when hiring as employees can be trained on service.

CHAPTER FIVE

SUMMARY, CONCLUSION, RECOMMENDATIONS AND SUGGESTION FOR FURTHER RESEARCH

5.1 Introduction

This chapter presents the discussion of the findings, summary and recommendations for further studies.

5.2 Summary

The objective of this study was to establish the effect of technology on performance of insurance companies in Kenya. Data was collected from a total of 54 insurance companies. Descriptive analysis was performed to get an understanding of the spread of the variables. Document management systems is the most widely used technology process (Mean= 4.856). This is probably explained by the fact that all the other processes are premised on document management. Customer management systems, business process management systems and financial management systems were also indicated to be highly used by insurance companies (Mean above 4. 400). Human resource systems and intelligence management systems were indicated to be used to a lesser extent compared to the rest of the processes (Mean below 3.600).

The analysis reports shows that nearly all insurance companies ensure that their employees are conversant with modern technology (Mean=4.756). The findings show that on technological hardware shows that nearly all respondent organizations used technology hardware such as computers (Mean=4.870), laptops (Mean= 4.789) and phones (Mean = 4.980) in their marketing programs at one point or another. The statement on whether insurance firms offer internal training on technology was the

most supported (Mean=4.789). Employment of staff who are knowledgeable in technology was also considered important (Mean= 4.675). The statements on customer orientation using technology and use of artificial intelligence were equally well supported.

The results of the regression analysis indicate that there is a positive and statistically significant relationship between technology and performance (P Value was less than 0.05). The conclusion is that increasing application of technology leads to enhanced performance.

5.3 Conclusion

The objective of this study was to determine the relationship between technology and performance of insurance firms in Kenya. The descriptive analysis on technological process show that document management systems is the most widely used technology process (Mean= 4.856). This is probably explained by the fact that all the other processes are premised on document management. Customer management systems, business process management systems and financial management systems were also indicated to be highly used by insurance companies. This finding is consistent with Kerinet (2006) who argues that technology enhances customer's relationships, customer loyalty, commitment, satisfaction by attracting new customers and retention.

The regression results show that the relationship between technology and performance of insurance companies is statistically significant. The implication is that enhancing the application of technology within the company increases its performance. This finding agrees with Lovelock et al (2004) who notes that technology enhances performance in positioning a firm by creating positive relationships and network with customers, suppliers, media and consumers. Kerinet (2006) also reports that technology enhances development of sustainable environment through awareness and

accessibility to information which enables companies make positive contributions and be socially responsible to the environment.

5.4 Recommendations

The researcher recommends companies to use modern technology in their operation as it enhances performance in service delivery, reduces costs and increases efficiency and relationships. He also recommends regulators and policy makers to use technology in licencing, monitoring and control of companies' activities to protect policyholders' interest. Also he recommends companies to issue codes and guidelines on individual data stored and transferred by use of technology to ensure their safety and privacy.

5.5. Suggestions for further research

The researcher suggests that further studies be carried out on the effect of technology on performance. A longitudinal study will be used in data collection. A longitudinal study will enable the collection of data at more than one point. This will make it possible to manipulate the intensity of the independent variable and observe the shifts in performance.

The current study was undertaken in the service industry. It is therefore suggested that future researches be undertaken in the manufacturing sector.

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APPENDIX I: INTRODUCTORY LETTER

UNIVERSITY OF NAIROBI
COLLEGE OF HUMANITIES AND SOCIAL SCIENCES
SCHOOL OF BUSINESS

Telephone: 020-8095398
Telegrams: "Varsity", Nairobi
Telex: 22095 Varsities
Our Ref: D65/6445/2017

Tel: 020 8095398
Nairobi, Kenya
DATE: 21st July, 2020

TO WHOM IT MAY CONCERN

The bearer of this letter, **Stephen Nyakundi Otiso** of Registration Number **D65/6445/2017** is a Master of Science in Marketing (MSc) student of the University of Nairobi.

He is required to submit as part of his coursework assessment a research project report. We would like the student to do his project on Effect of **Technology on the performance of Insurance Companies in Kenya** We would, therefore, appreciate if you assist him by allowing him to collect data within your organization for the research.

The results of the report will be used solely for academic purposes and a copy of the same will be availed to the interviewed organization on request.

Thank you.

PROF: JACKSON MAALU
DEAN, SCHOOL OF BUSINESS

2 1 JUL 2020

36
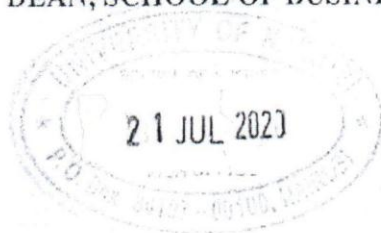
The information which would be obtained would be used for academic use only and not for any other purpose.

SECTION A

DEMOGRAPHIC INFORMATION

Please supply the required data by filling in the spaces provided or by ticking against appropriate answer provided.

1. What is your position in the organization?

2. How long have you worked with this company?

   0-5 Yrs

   6-10 Yrs

   11-15 Yrs

   16-20 Yrs

   Over 21 years

3. How long have you worked in insurance Company?

   0-5 Yrs

   6-10 Yrs

   11-15 Yrs

   16-20 Yrs

   Over 21 years

4. What is your academic qualification/

   O Level

   Diploma

   Masters

PHD

5. What is the number of employees in your organization

   Below 50 employees

   51-99 employees

   100-149 employees

   150-199 employees

   Over 200 employees

6. For how long has the firm been in existence?.................................

   Tick where appropriate

   0-5 Yrs

   6-10 Yrs

   11-15 Yrs

   16-20 Yrs

   Over 21 years

SECTION B :TECHNOLOGY

7. To what extent does the following technologies are used in your organization. Tick where appropriate on a scale of 1-5 where: 1 – strongly agree, 2 agree, 3 moderate, 4 disagree, 5 strongly disagree

SECTION B1: PROCESS

Statement	1	2	3	4	5
Business process management systems					
Customer management systems					
Financial management systems					
Human resource management systems					
Document management systems					
Intelligence management systems					

SECTION B2 SKILLS AND EXPERIENCE

To what extent does the following technologies are used in your organization.

Tick where appropriate on a scale of 1-5 where: 1 – strongly agree, 2 agree, 3

moderate, 4 disagree, 5 strongly disagree

Statement	1	2	3	4	5
We use services of experts in technology					
offer periodical training on technology					
Ensure employees are conversant with modern technology					
We employ on the basis of relevant experience					
The skills of our employees are updated continuously					
We benchmark with international best practices in technological skills					

SECTION B3: Technological Hardware

To what extent does the following technologies are used in your organization.

Tick where appropriate on a scale of 1-5 where: 1 – strongly agree, 2 agree, 3 moderate, 4 disagree, 5 strongly disagree

Statement	1	2	3	4	5
Use computers					
Use laptops					
Use phones					
Use trackers					
Use projectors					
Use Geographical positioning systems (GPS)					

SECTION B4: KNOWLEDGE

To what extent does the following technologies are used in your organization.

Tick where appropriate on a scale of 1-5 where: 1 – strongly agree, 2 agree, 3

moderate, 4 disagree, 5 strongly disagree

STATEMENT	1	2	3	4	5
Employ staff who are knowledgeable in technology					
Employees are conversant with modern technology					
Over customer orientation on technology					
Do periodical review on technology					
Encourage use of artificial intelligence					
Offer internal training on technology					

SECTION C: PERFORMANCE

To what extent your organizational performance will be measured using the below

parameters?

Tick where appropriate on a scale of 1-5 where: 1 – strongly agree, 2 agree, 3

moderate, 4 disagree, 5 strongly disagree

	1	2	3	4	5
Increase in sales					
Increase in market share					
Increase in profit					
Reduction on cost of production					
Efficient allocation & utilization of resources					
Improved communication in the protection of the environment					
Improved employee performance					
Increase in speed of delivery					
Expansion of new markets					

APPENDIX III: LIST OF INSURANCE COMPANIES IN KENYA

1. AAR Insurance Kenya Limited

2. Africa Merchant Assurance Limited Company

3. AIG Kenya Insurance Company

4. APA Insurance Company Limited

5. Apollo Life Insurance Limited

6. British American Insurance Company Limited

7. Britam Asset Investment Company

8. Cannon Assurance Company Limited

9. Capex Life Assurance Company Limited

10. CFC Life Assurance Company

11. CIC General Insurance Company Limited

12. CIC Life Insurance Company Limited

13. CIC Health Insurance Company Limited

14. Corporate Insurance Company Limited

15. Directline Assurance Company Limited

16. Fidelity Shield Insurance Company Limited

17. First Assurance Company Limited

18. GA Insurance Company Limited

19. Gateway Insurance Company Limited

20. Geminia Insurance Company Limited

21. Heritage Insurance Company Limited

22. ICEA-Lion General Insurance Company Limited

23. ICEA-Lion Life Assurance Company Limited

24. ICEA Medical Insurance Company Limited

25.   Intra Africa Assurance Company Limited

26.   Invesco Assurance Company Limited

27.   Jubilee Health Insurance Company Limited

28.   Jubilee General Insurance Company Limited

29.   Jubilee Life Insurance Company Limited

30.   Kenindia Assurance Company Limited

31.   Kenyan Alliance Insurance Company

32.   Kenya Orient Insurance Company

33.   Madison Insurance Company

34.   Madison Life Insurance Company Limited

35.   Mayfair Insurance Company

36.   Mercantile Insurance Company Limited

37.   Metropolitan Life Insurance Kenya Limited

38.   Monarch Insurance Company Limited

39.   Occidental Insurance Company Limited

40.   Old Mutual Life Assurance Company Limited

41.   Pan Africa Life Assurance Company Limited

42.   Pacis Insurance Company Limited

43.   Phoenix of East Africa Assurance Company Limited

44.   Pioneer Life Assurance Company

45.   Real Insurance Company

46.   Resolution General Insurance Company Limited

47.   Resolution Medical Insurance Company Limited

48.   Shield Assurance Company

49.   Takaful Insurance of Africa

50.   Tausi Assurance Company

51.   Trident Insurance Company

52.   UAP Insurance Company

53.   UAP Life Insurance Company

54.   Xplico Insurance Company Limited