THE EFFECTS OF FINTECH ON GROWTH OF INSURANCE COMPANIES IN KENYA

BY

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DECLARATION

This research proposal is my original work and has never been presented for a degree at any other university for examination.

Signature __  _____ Date: 09 November 2021

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This Research proposal has been presented for examination with my approval as University

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ABBREVIATIONS

ATM: Automated Teller Machines

GDP: Gross Direct Premium

COBIT: Control Objective for Information and Related Technology

GAAP: Generally accepted accounting principles

IAIS: The International Association of Insurance Supervisors

IoT: Internet of Things

IRA: The Insurance Regulatory Authority

PWC: PricewaterhouseCoopers

ROA: Return on Assets

SPSS: Statistical Package for Social Science

TAM: Technology Acceptance Model

TAT: Technology Acceptance Theory

ABSTRACT

In the recent past, fintech has been redefining how organizations are offering their services. To remain competitive in a technologically changing environment, the financial services industry and other organizations are taking major technological transformations, and fintech is at the center of these transformations. This study aimed at establishing the effect of fintech on the growth of registered insurance firms in Kenya. The primary predictor variable for the study was fintech, as measured by the investment in intangible assets by insurance firms. The response variable was the growth measured by the gross direct premiums, the control variables included firms size, firm's profitability and the firm's liquidity. The study employed descriptive statistics as the study design. The study collected data for 52 registered insurances for four years. The study used five regression analysis assumptions: the test of normality, the autocorrelation test, the multi-collinearity test, the heteroscedasticity test and the Hausman test. Data presentation was mainly through the tables. From the study's findings, all the independent variables explained 83.1% of the change in the growth of insurance firms in Kenya. The analysis of the variance illustrated the independent variables used to be a good predictor of the growth of the insurance firms in Kenya. The outcome of the coefficients indicated fintech to have a positive and significant impact on the growth of the insurance firm in Kenya. This shows that the more the firms invest in fintech, the higher the growth chances in terms of gross domestic premiums. Firms' size and the firms' level of liquidity showed a positive and significant effect on the growth of insurance firms in Kenya. The firm's profitability demonstrated a negative but insignificant impact on the growth of insurance in Kenya. This indicates in short term the insurance firms use their profitability for their operations other than on the expansions of their firms.

CHAPTER ONE: INTRODUCTION

1.1 Background of the study

Lately, fintech has been redefining how organizations are offering their services. To remain competitive in a technologically changing environment, the financial services industry and other organizations are taking major technological transformations and fintech is at the center of these transformations. Many organizations are investing heavily in fintech to remain relevant in the market space. Organizations are using fintech to lower their operational costs, improve customer satisfaction and to be effective (PWC, 2016). Growth in many organizations especially financial institutions has been attributed to the adoption of fintech. As such, managers of the organizations should be open to adopting new financial technologies and leave behind traditional methods when making decisions concerning the expansion of their businesses (IAIS, 2018).

This study is founded on four theories which include the institutional theory, the technology acceptance theory, the resource-based theory, and the diffusion of information theory. The institutional theory brings out an understanding of the management and organizational practices of an institution. It gives out the foundation for an efficient analysis of innovation by the use of hypothetical contributions on the major differences between formal and informal institutions (David, Tolbert & Boghossian, 2019). In the Technology Acceptance Theory (TAT), the importance of the use of new technology in an organization and how it helps in accomplishing performance is discussed (Charness & Boot, 2016). The resource-based theory assumes that organizations and the customers are integrated into a network of resources which brings the dependency of both parties on resources of the other, and as a result, there exists collaboration for the parties to obtain the resources they don't have which creates opportunities in the long run. The resource advantage theory implies that every firm can be on top of the market if it utilizes its

unique set of resources well, hence attaining a superior competitive advantage which leads to greater performance (Hunt & Morgan, 2017). Diffusion of information theory involves technological innovations where various initiatives are transformed to become productive (Wani, & Ali, 2015).

According to the insurance outlook report by Deloitte (2021) the insurance companies in Kenya are shifting from traditional reactive experiences to predictive and proactive experiences. This is due to the role of Fintech, as it helps the insurance companies in analyzing the consumer needs and developing appropriated products for the customers. Many consumers in the Insurance sector in Kenya prefer to manage their policies online, which is a Fintech opportunity for insurance companies. Due to some factors such as inefficiency in operations, the Kenyan insurance sector has experienced losses and a decline in returns on equity. Fintech offers a transformative solution that can help in addressing these challenges by incorporating data analytics tools to facilitate cross-channel selling, investing in robotic process automation of routine tasks to detect and prevent fraud, and creation of shared services centers to streamline operations (PWC, 2016). Despite the many internal and external opportunities of Fintech to the Insurance companies, the Majority of Insurance companies in Kenya are yet to fully adopt Fintech in their operations (Deloitte, 2021). This study will therefore seek to establish the extent of the adoption of FinTech by insurance companies in Kenya and the impact it has on their growth.

1.1.1 Measures of Fintech

The International Association of Insurance Supervisors (IAIS) uses the word "Fintech" or Financial Technologies to describe the improvement of financial technology that could bring about new business models, processes, products, or applications that have a related physical influence on commercial institutions and markets to provide monetary amenities, and cover a comprehensive

range of technical modernizations that are discovering how to reach the financial industry (IAIS, 2018). Puschmann (2017) defines financial technology or Fintech as the new technology that intends to automate and expand the delivery and use of financial facilities. Fintech is employed to help companies, business owners, and customers to control monetary processes and operations by ensuring individuals live by employing specialized algorithms and software utilized on computers and, progressively, smartphones (IAIS, 2018). Fintech operations range from the invention of cryptocurrency to double-entry bookkeeping Thus, Fintech refers to integrating and incorporating technology into assisting financial institutions to improve techniques and how their services are delivered and used by their consumers while increasing the value of the owners of those businesses (Philippon, 2016).

The fintech in an organization is measured through the investment on various technological techniques such as big data, the internet of things, blockchains, and digital platforms. To assess Fintech, it is important to consider how an organization utilizes these technologies in its day-to-day activities. Also, Fintech can be measured through input, throughput, and output. An organization's financial technology can be measured through its input where the number of Fintech companies in a certain region is considered, and the amount of capital an organization has invested in the Fintech sector. Throughput can be used to measure Fintech by considering the kind of activities and number of projects a Fintech organization carries out. Finally, Fintech can be measured by an organization's output. This is done by considering how financial technologies affect the growth and innovation of an organization (Didenko 2017).

1.1.2 Growth

Attract Capital (2019) defines growth as a stage where a business organization reaches the point for expansion and seeks additional options to generate more revenue. The additional options might

include adopting new information technology systems to improve the organization's efficiency which in return increases its profitability. Other options include increasing the organizational market share which results in the increased revenues and customer demand. The last option for organizational growth involves increasing the size of the organization with aim of generating more revenues from the assets.

According to Ondari, Koech & Otieno (2011) growth is an increase in a firm's revenue, sales, assets, productivity, profits margins, customers, or even employment while putting into consideration external factors in the organization. The increase in goods and services produced within a country's economy is referred to as economic growth. As outlined by Balcilar, Gupta & Olasehinde (2020) the insurance market is greatly influenced by economic growth in a country through various activities which include risk pooling, investment opportunities, saving mobilization among others.

There are several ways in which companies measure their growth. The most common basic measurements of an insurance company's growth may include the levels of premiums paid by the policyholders, the number of life insurance policies in force, and the total or net assets held by a particular insurance company. According to the Generally Accepted Accounting Principles (GAAP), the earnings per share in the stock insurance company can also be used as a measure of the company's growth. Growth of the above attributes may indicate growth in successful service to customers involved. Another method of measuring growth is through the growth rate formula which entails comparing the revenues for two years then converting them into percentages (Song & Chen, 2014).

1.1.3 Fintech and Growth of Insurance Companies

Fintech advances are reforming financial services provisions. They are creating new opportunities and, consequently, new challenges to the insurance industry (Philippon, 2016). In 2017, IAIS published a report, 'Fintech Developments in the Insurance Industry' which depicted relevant potential inventions that may transform the insurance industry. According to Loesch (2018) FinTech adoption majorly influences the insurance industry: it pulls down obstacles to entry through the elimination of large administrative buildings and physical branches, disconnecting the modern value chains, presenting different business models founded on sharing economies and platforms, and offering a more effective service provision.

FinTech has brought a transformation in old insurance services on how they work and relate with their customers. It has brought change to the leading models that provide traditional insurance services, bringing about a real disturbance in the possibility of growing market share and appropriate business models. According to Nicoletti, Nicoletti & Weis (2017), Fintech innovations may impact the insurance sector in cost reduction, efficiency improvement, and exceptional customer experience. It will also ensure improved financial inclusion and risk assessment. Fintech innovations are disruptive and may significantly affect the insurance sector, which necessitates this study's need, to find out the effects of FinTech on the insurance companies' growth in Kenya.

1.1.4 Fintech among insurance companies in Kenya

According to a study carried out by Nzioka (2017), Kenyan financial institutions mainly focus on using financial technology systems to solve their financial problems. This includes coming up with new modes of premium payments by policyholders among other services in insurance companies. From the study, it was found out that in Kenya some of the factors that greatly affect the Fintech companies include political, technological, economic and governing.

Mugane (2018) conducted a research study on big data analytics and the competitive advantages it poses to financial institutions. The study used multiple regression to come up with the relationship between big data analytics adoption and a company's competitive advantage in the market. From the results of the study, it was found that adopting big data analytics in financial institutions like insurance or commercial banks in Kenya leads to an enormous competitive advantage in the market. The competitive advantages include improved customer services and improved company management operations.

Some of the Fintech solutions in the Kenya insurance industry include digital platforms (internet, smartphones), big data and data analytics, internet of things (IoT), connected/smart car, connected health, blockchain, medical advances, usage-based insurance (pay-as-you-go), etc. All these innovations have been established to have a positive impact on the organization (IAIS, 2018). A study by Deloitte (2021) indicates that Fintech in the Kenya insurance industry is an avenue for companies to improve on their services to customers. The study further shows that the majority of the customers have embraced Fintech while the insurance companies are yet to fully adopt all the available Fintech to their operations.

1.2 Research Problem

Fintech offers great potentials to increase access to financial services. The rapid rate at which Fintech is developing is consequently transforming the landscape and paradigm of financial services (Puschmann, 2017). Fintech is providing affordable and easy access to insurance products. This does not only aid in smoothing consumption but also improves individuals' livelihood by enabling easy access to credit, cheaper payment techniques and better saving methods. This is critical in ensuring a sustainable and developed economy. Fintech has the capacity to spurring

efficiency gains in the insurance sector. Additionally, it can also offer more targeted and better products and profound financial inclusion (Nicoletti, Nicoletti & Weis 2017). Fintech is, therefore, an important driver of change, development and transformation in the financial sector.

The insurance sector in Kenya is no exception to these developments. According to Ndung'u (2019), Fintech would impact insurance companies through the following ways; providing new and better ways of offering insurance services and enabling new better opportunities for data collection and fraud detection which results in improved risks recognition and mitigation measures. Fintech is, therefore, capable of transforming and revolutionizing the insurance sector. These transformations may, however, be first accompanied by doubt and uncertainty. To remain competitive in the digitalized world, the insurance sector in Kenya has no option but to embrace some of the Fintech innovations, if not all of them.

Several studies have been carried out both internationally and locally concerning fintech. Gibson (2015) conducted a study regarding the impact of Fintech on the financial sector in Ireland. Although he concluded that Fintech influences the operations of the financial institution, his study was more based on a developed economy. This is contrary to Kenya's economy and thus, cannot be related to the Kenyan context Truong (2016) also researched to examine how Fintech is changing and impacting the world. This study is, however, too broad. It neither looked into a particular country nor a specific sector. Locally, Kemunto & Kagiri (2018) carried a study on how Fintech strategies implementations affected competitiveness in the banking industry in Kenya. The study employed a descriptive statistic. The key areas for Fintech were mobile banking, e-banking, agency banking, and processes automation. The study established that the implementation of the above variables resulted in a positive impact on the banks' competitiveness. According to a study conducted by Mutua (2013) commercial banks in Kenya have embraced fintech to minimize

operational costs and foster profitability. The financial technologies include mobile banking, the use of Automated Teller Machines (ATM), and internet banking. The descriptive research design was employed in the study to delineate how the financial performance of commercial banks in Kenya has been affected by the use of mobile banking.

Kiilu (2018) carried a research study on how fintech impacted commercial banks' performance in Kenya. The study carried out a correlation analysis to determine the impact of fintech on the banking sector. The study used mobile payments by banks to be the independent variable while the dependent variable was the return on assets for the banks. The regression analysis results revealed that an increase in mobile payments transaction increases the performance of commercial banks, therefore, employing fintech affects the financial performance of banks in Kenya positively.

Most of the studies carried locally were done mostly on fintech and the performance of banks and therefore there is a literature gap regarding the effect of Fintech on the growth and development of insurance companies in Kenya. As a result, this study will fill that gap by answering the question of what is the effect of fintech on the growth of insurance companies in Kenya?

1.3 Research objective

The objective of this study is to determine the effects of fintech on the growth of insurance companies in Kenya.

1.4 Value of the study

The findings of this research study will make a boundless contribution to the insurance companies in Kenya by guiding them on how to adopt fintech for their growth. The management of insurance

companies will be in a position to make decisions on which fintech to adopt to either increase their revenues or reduce their costs.

Policymakers such as Insurance Regulatory Authority will benefit from this study by coming up with policies that will enable the adoption of fintech by insurance companies. In addition, the insurance authority will be in a position to know which framework should be established to regulate the adoption of fintech by the insurance companies in Kenya.

Findings from this research study will make additions to the known literature on the Kenyan insurance companies' performance with the use of fintech. Fintech has a conspicuous positive impact on how insurers are performing in the market. This will be clearly outlined in this research study.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter looks at theories that the study is based on. Determinants of growth are presented as well in this chapter. The works of the other scholars who studied this area of fintech are presented under empirical review. Finally, the literature review summary and the conceptual framework are outlined.

2.2 Theoretical review

This study focused on four theories to explain how fintech relates to organizations. These theories include; institutional theory, technology acceptance theory, resource-based theory, and diffusion of information theory. The four theories will bring a clear picture of this study.

2.2.1 Institutional theory

The institutional theory emerged between the 1950s and 1960s from Max Weber's work on legitimacy and authority. Originally, the theory was recorded on work done on organizational environment relations by Alvin Gouldner, Talcott Parsons, and Philip Selznick. The institutional theory brings out an understanding of the management and organizational philosophy of an institution. It gives out the foundation for an efficient analysis of innovation by the use of hypothetical contributions on the major differences between formal and informal institutions. Institutional theory is commonly used to elucidate the idea of adopting and diffusion of the formal structures of an organization (David, Tolbert & Boghossian, 2019).

Thus, Institutional theory emphasizes how important it is for organizations to adapt and cope with their environments. With the advent of new technology systems, the growth of Fintech has attempted to take advantage of these environmental changes. Therefore, insurance companies in

Kenya must conform to the present-day social structures and behaviors in the market. Any newly established insurance company should rapidly adapt to the business environment, and utilize technology, for instance, put fintech into use to remain relevant, agile, and viable in the market.

2.2.2 Technology acceptance theory

Technology Acceptance Model (TAM) was first developed by Fred Davis in the late 1980s (Sauro, 2019). The core purpose of developing this model was to examine whether the investment which had been made in computing technology was worth it. Various factors led to the implementation of the technology acceptance model. Davis focused only on two factors to construct the technology acceptance model. According to Sauro (2019) the factors included the apparent usefulness of the new technology and the apparent ease of use of the information systems. An information technology system that is not embraced by its users, is not a success. The apparent ease of use refers to how easy a person finds it to use or operate the new technology systems. On the other hand, apparent usefulness implies how a person finds it essential to utilize the new technology systems to escalate job performances.

Over more than 30 years, several models have been developed to bring out the link between people, technological systems, and contextual factors which have a potential impact on the acceptance of the information system. In the Technology Acceptance Theory, the interaction of apparent ease of use and apparent usefulness examines the purpose of the users to utilize the technology in question, which can lead to actual information system utilization (Charness & Boot, 2016).

Technology acceptance theory will play a very crucial role in this study in outlining how fintech affects or will affect various insurance companies in Kenya. If insurance companies come up with innovative information technology systems and or solutions, the innovation must be

acknowledged and implemented by both the public and its won employees. In this century, every old insurance firm wants to upgrade its old information systems to the most updated ones. On the other hand, the newly established insurance companies want to use the most recent information technology systems from the onset. Both the newly established and the existing insurers ought to understand if the technology they want to use will be accepted by the people and how long will it take them to fully adapt to the technology (Charness & Boot, 2016).

2.2.3 Resource-based theory

The resource-based theory was developed by Barney (1991). Barney's idea to write his article, "Firm Resources and Sustained Competitive Advantage" came up after being influenced by Prahalad and Hamel, Spender and Grant, and Birger Wernerfelt's earlier works which had been done in the 1930s. The resource-based theory offers business strategists means of evaluating factors that can be deployed to conquer the competitive edge in the market. Barney points out that in practice, it is very difficult to understand between the sources of advantage and the successful strategies to put in place for an organization. Thus, the management of any organization must heavily invest in how to develop, nurture, and maintain the most crucial resources and competencies (Hunt & Morgan, 2017).

The resource-based theory assumes that organizations and the customers are integrated into a network of resources which brings the dependency of both parties on resources of the other, and as a result, there exists collaboration for the parties to obtain the resources they don't have which creates opportunities in the long run. The resource advantage theory implies that every firm can be on top of the market if it utilizes its unique set of resources well, hence attaining a superior competitive advantage which leads to greater performance (Business Balls, 2020).

Thus, Fintech is a very important resource for insurance companies in this century. If it is utilized perfectly, the dependency of the policyholders and the insurers will be integrated to bring out the best services provided by the insurance company involved. Putting fintech into use will increase any insurance company's leverage, and as a result, a good reputation for the involved company or firm will be established.

2.2.4 Diffusion of information theory

According to Wani & Ali (2015) the Diffusion of Innovation (DOI) theory originated in the 20th century. Being one of the oldest social science theories, the theory was popularized in the year 1962 by E.M. Rodger. This theory explains how an idea diffuses through a social system over time. People who are part of the social system may or may not adopt the idea according to their preference. The diffusion process is usually possible only when the people involved perceive the product or the idea as new or innovative. Innovations that are perceived to be low complex, and have low economic costs are greatly preferred over those which seem to be complex to understand, and involve high costs. Diffusion of innovation helps marketers to understand trends. Thus, for this reason, companies can estimate the likelihood of success or failure on the adoption of a certain commodity or service.

The innovation (an idea or a product) has various characteristics which greatly impact the likelihood of adoption. The characteristics suggested by Rogers include; malleability, compatibility, relative advantage, and advantage complexity. Also, these characteristics greatly affect the adoption rate of new technology. Diffusion of technology involves technological innovations where various initiatives are transformed to become productive. Financial innovation and technology diffusion are the lifeblood of an efficient capital market (Wani & Ali 2015). The

diffusion of information theory is very crucial in this study because it will help in establishing how fintech has transformed the Insurance industry in Kenya in terms of growth.

2.3 Determinants of Growth

The growth of an organization is based on various factors which may be internal or external. For the insurance companies' growth is also determined by some factors which are either internal or external. Determinants of growth discussed in this study include Fintech, Size of the firm, Profitability of the firm and the liquidity of the firm.

2.3.1 Fintech

Fintech as a determiner of growth entails big data, the Internet of things, blockchains, and digital platforms. All these variables combine to form fintech in insurance companies and each is discussed below:

Big data plays a crucial role in the insurance industry. The insurance industry needs to have a lot of information to make important financial decisions. Fintech decisions in insurance companies mainly include the assessment of the premiums to be paid by policyholders. According to Lee & Shin (2018) the presence of big data provides insurance companies with the ability to analyze their customers. Insurance companies mainly depend on big data to collect information which they use in making their decisions.

Internet of things refers to the use of the Internet to facilitate transactions and communication between organizations. Internet of things is important as it allows the sharing of information between the fintech industry and the Insurance companies. Information sharing is important in making decisions of the insurance company on the amount of the premiums to charge the

policyholders. According to Kigochi (2008) creating an operational budget for the insurance company always faces several challenges which are solved by the internet of things.

Blockchain is the automation of the services such as payments. According to Brophy (2019) the Kenyan insurance industry is more interested in blockchain. Insurance companies in Kenya have automated payment systems whereby after policies have matured, payments are made conveniently. Salary payments of the employees and other bills are made easy through the use of the blockchain. The customers also pay the premiums just by swiping their cards.

Fintech digital platforms include the digital payment and banking system which have been adopted by financial institutions. Digital platforms in Kenya include m-banking systems and mobile money services. According to Mwange (2013) mobile banking has directed to advancement in financial performance. Digital platforms such as m-banking and mobile money allow the customers to carry out the payment of premiums at any time from anywhere. In insurance digital platform is used in designing a self-service portal where customers of the firm can access information such as, making a claim, paying bills, premium requests e.tc which helps in improving customers' experience. Internet Digital platforms also help in fraud detection where insurers feed predictive analytics data obtained from the customer's story and can detect the fraud (Kantarci, 2021).

2.3.2 Size of a firm

The size of the firm can be determined through the assets the organization has. The firm's financial statements present a reliable source for organizational assets. Tien and Yang (2014) established that the size of the firm through assets to have a direct relationship with the growth of organizations. The organization which has many assets has the potential of increasing its revenue and eventually growth is realized. A study by Fiala & Hedija (2015) presents contradictory results in relation to firms' size and growth. The results revealed that small firms grow faster as compared

with big firms. Firms size helps the organization to expand by opening many branches which is determined by its asset ability to generate income (Razaq & Akinlo,2017).

2.3.3 Profitability of a firm

The profitability of the firm is the potential the firm has to generate income from its assets. It is calculated by the application of the returns on assets formula. According to Razaq &Akinlo (2017) the profitability of a firm is the main facilitator for all the firms' growth. The profitable organizations have enough cash flow to invest in new ventures for their businesses. Jang & Park (2011) indicate that profitability enhances growth while on the other hand growth prevents profitability.

A firm's profitability in the long run influences growth positively, while the profitability in short term may either have a positive or negative impact on the growth. Organizations that experience long-term profitability have the potential of accumulating the incomes which can be used for expansions while the short-term profitability can act as a source of funding for short-term operations in the organization (Demirgunes & Ucler, 2015). A study by Coban (2014) presents a contrary opinion which shows that growth in the short term or current year is affected positively by the firm's profitability in the short term or current years. Profitability can therefore influence a firm's growth in the short term or in the long term.

2.3.4. Liquidity of a firm

Liquidity is the ability of a firm to meet its obligations when they are due. Liquidity can also be the ability of the firm to convert its short-term assets to cash and is calculated by the current ratio formula. A study by Ogaili (2020) indicates a positive relationship between liquidity and a firm's growth. A firm that is liquid has the potential of growing faster as compared with a firm that has

low liquidity. A study by Salman (2019) indicates that firms that are financed by debts tend to grow although they have to maintain liquidity and profitability in their capital structure.

2.4 Empirical Review

Bharadwaj, Jack & Suri (2019) carried a research study on financial technology on household resilience to shocks. According to the study, developing countries like Kenya are utilizing financial technology tools to build digital loans which can be accessed through mobile phones. The study used both administrative and survey data to investigate the impacts of one of the digital loans in Kenya referred to as M-shwari. From the research findings, digital loans foster household flexibility.

Kemunto & Kagiri (2018) carried a study on how Fintech strategies implementations affected effectiveness in the banking industry in Kenya. The research study employed descriptive statistics. The key areas for Fintech were mobile banking, e-banking, agency banking, and processes automation. The study established that the implementation of the above variables resulted in a positive impact on the banks' competitiveness.

Abdulkadir (2018) researched how fintech affects the financial performance of Kenyan commercial banks. The study evaluated how the usage of mobile and internet banking in the commercial banking sector affected its financial routine in the market. Only 35 commercial banks were sampled to determine the number of transactions conducted through the internet and mobile banking. The study established the stated variables positively affected the banks' performance.

According to a study conducted by Mutua (2013) commercial banks in Kenya have embraced fintech to minimize operational costs and foster profitability. The financial technologies include mobile banking, the use of Automated Teller Machines (ATM), and internet banking. The

descriptive research design was employed in the study to delineate how the financial performance of commercial banks in Kenya has been affected by the use of mobile banking.

A study carried out by Mokaya (2020) publicized how financial performance was affected by Fintech in tier two banks in Kenya. The major key areas of financial technology which examined the financial performance of the tier two banks were online banking, mobile banking, and Automated Teller Machines (ATM). The descriptive research design was employed in the study, and regression analysis and correlation analysis were employed to establish the relationship between the variables used. The research study analyzed how a unit increase or decrease in each financial technology would affect the overall financial performance of the tier two banks.

According to Rodríguez et al,.(2019) improvement of the financial technology through information systems, computing, communication, and connectivity technologies have led to the adoption of the Chatbot technology which in return has improved the performance of the insurance sector in German. This study designated how Chatbot technology has fostered the financial performance of the insurance industry by reducing operational costs, improving insurance efficiency, and generating customer trust and loyalty.

Niraula & Kautish (2019) researched the effects of digitization and its obstacles in the insurance industry of Nepal. From their research findings, the main challenge is the adoption of the appropriate information technology systems to improve competitiveness, increase profitability, and foster insurance service efficiency. The research study analyzed how policyholders adopted the new technology and the obstacles encountered by the employees in the insurance companies in Nepal. From the study, it was revealed that Nepal insurance companies need to do a lot on Fintech to be outstanding in the level of the consumer's expectations. Also, several obstacles are hindering the growth of Fintech in the Nepal insurance industry.

Vugec, Spremić & Bach (2017) carried a research study on information technology adoption in the insurance and banking industry with a case study of COBIT usage. According to the study, for any business firm to increase profitability and improve efficiency, embracing information technology should be a priority. A case study of two insurance companies and two commercial banks was undertaken to investigate the implementation of the COBIT (Control Objective for Information and Related Technology) framework in the financial sector. The research emphasizes the importance of strategic information technology used to improve the financial performance of the banking and insurance sectors.

2.5 Summary of the Literature Review

This section entails the summary of literature discussed in theories, empirical review, and determinants of growth. After a keen review of the theories and other studies carried both internationally and locally, there is no specific study carried out in Kenya on the issue of fintech and the growth of insurance companies. The studies carried out both globally and locally mainly relate to fintech and its impacts on the economy, banking sectors, or specific institutions. The few studies conducted internationally specifically entailed the performance or implementation of fintech. Locally, all the fintech studies reviewed were done on banks and there is a gap that needs to be filled. This informs the need for this study which will focus on the growth rate of insurance companies based on premiums as the independent variables then fintech, firms liquidity, firms size, and firms liquidity as the independent variables.

2.6 Conceptual framework

A conceptual framework gives out the graphical presentation of the dependent variables and the independent variables relationship. The independent variable for this study is fintech, the size of the firm, the Profitability of the firm, and the liquidity of the firm. The dependent variable is insurance growth represented by Real Gross direct premium growth.

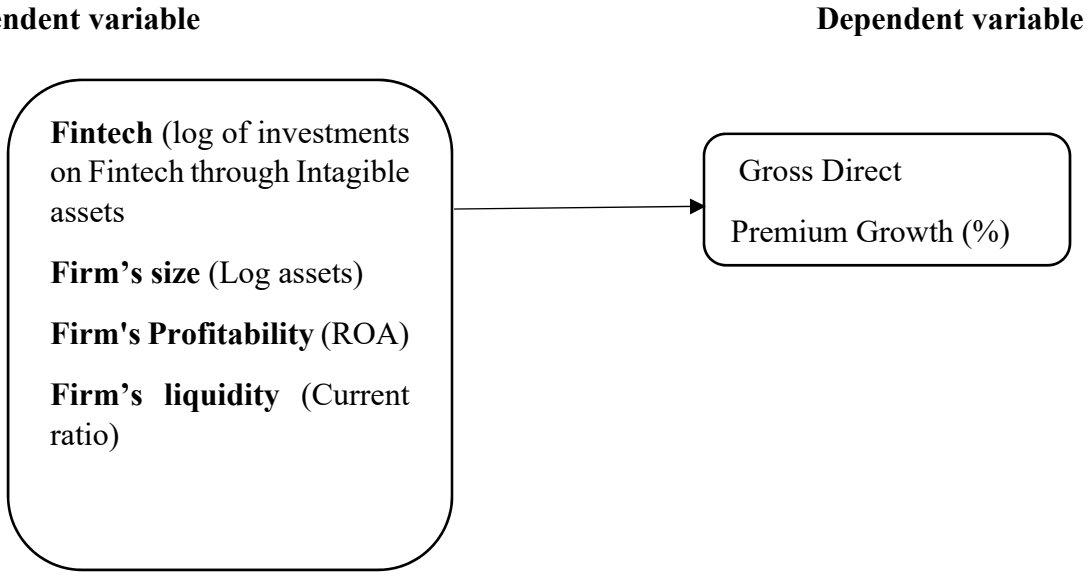

Figure 2. 1 Conceptual Model
Source: Researcher, 2021

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter discusses the study methodology that was used in getting answers for the research objectives as outlined in the study. The following methodology for the study are looked at; research design, study population, sample size, data collection procedure, regression diagnostics, data analysis procedure, analytical model, and test for the significance.

3.2 Research Design

A descriptive research design was used for this study. This method was ideal for the study since the data collected helped to answer the study questions. Descriptive research helps the scholar in establishing the relationship between selected variables in a study. It also involves a field study, a means through which data is collected. In this study paper, quantitative data was applied (Dulock,1993).

A descriptive research design was appropriate for this study because it defines subjects by defining population, events, or occurrences by collecting and tabulating data of the variables under study. Further descriptive design helps in explaining the state of variables, elimination of biasedness during data collection, and makes the cost of collecting target data from the population to be cost-effective (Williams, 2007).

3.3 Population

Mugenda and Mugenda (2003) defined a population as a collection of required elements on which the researcher makes inferences for the study. It involves the combination of objects or individuals that is focused on the purpose of scientific query and have similar characteristics. Population targets the area in which the study findings aim at generalizing the outcome (Gall et al., 2007). The target population for this study was 55 registered insurance companies in Kenya.

3.4 Sample Design

According to Bam (1992) sampling is defined as a selection of a subject of individuals from a population and making predictions based on statistical inference. Sample size refers to the number of items to be selected from the universe to present the whole population (Kothari, 2004). Sampling enables the drawing of valid inferences from the population (Gall et al., 2007). Mugenda and Mugenda (2003) recommend a sample of 10% - 50% of the target population for large and small numbers, respectively. This study used 52 insurance companies as sample size; this is because the study data was for four years that is from 2016-2019 and for 2016 the registered insurance companies were 52; for the sake of keeping conisitency in the analysi the 52 companies were ideal to be the sample size.The sampling method for the paper was convenience sampling method because is based on the availability of the data (Sedgwick, 2013).

3.5 Data Collection

The research used secondary data. The secondary data was obtained through data mining from the financial statements of individual organizations selected for the study and the insurance industry annual report for four years (2016-2019). The insurance industry annual report is an annual publication by IRA which gives out the outlook of insurance industry in Kenya.The research focused on gross direct premium growth, firms size, firms profitability, investments on fintech through intangible assets and firms liquidity for four years. This provided the research with longitudinal data that gave insights about cross-sectional variations, dynamics, and avoided problems associated with cross-sectional data.

3.6 Regression Diagnostics

The diagnostic tests done in this study involved normality tests, the multi-collinearity test, the test for autocorrelation and the test for homogeneity.

3.6. 1 Normality test

Tests for normality calculates the probability that the sample was drawn from a normal population indicated through the mean and the standard deviation. This study applied Shapiro-Wilk to test for normality. In cases where the data was not normally distributed, it was transformed by the use of the logarithm and other SPSS technques methods to make it normally distributed for the analysis.

3.6.2 Multi-collinearity test

Multicollinearity mainly occurs when two or more predictor variables have high correlations thus creating misleading information from the data. Variance inflation factor (VIF) was used to measure the presence of multicollinearity. The range of VIF between 1-10 presents the absence of multicollinearity while on the other hand VIF range of less than 1 or above 10 indicates the presence of the multicollinearity. The variable which exhibits the presence of muti-collinearity is dropped and replaced by another one. Increasing the data is also another way of reducing multicollinearity in the data variables (Ayuya, 2021).

3.6.3 Autocorrelation test

Autocorrelation indicates the degree of similarity or relationship between values in the same variable in time series. Autocorrelation is measured by the Durbin-Watson test which presents the range of 1- 4. Values close to 2 indicate less autocorrelation while values close to 0 or 4 indicate a negative correlation (Sun, 2013).

3.6.4 Heteroskedasticity test

Heteroscedasticity is used linear regression to determine whether the variance of errors are homogeneous (variance of data set are the same) **(**Sun,2013). Levene test was used to test the heteroscedasticity assumption in the data **(**Sun,2013).

3.6.5 Hausman test

The Hausman test helps in detecting the predictor variables in the regression model. The predictor variable contains values that determine each other in the same system. The Hausman in the overtime data helps in choosing the model type that is; the fixed effect model or the random-effects model. The test further determines whether there is a relationship between the regressors and unique errors in the model. When there is no connection between the two the null hypothesis is used; thus random-effects model. The null hypothesis is based on the p-value which is greater than 0.05 (Sheytanova, 2015).

3.7 Data Analysis

Descriptive statistics will be done on all the variables to give out the mean and the standard deviation for the data. Inferential statistics will be used on regression and correlation analysis. Regression analysis will be done on the dependent variable against all the four independent variables.Correlation analysis will be done on all the variables to indicate the correlation among the variables.All the analyses will be done using SPSS version 25. The operationalization of the variables is indicated in the table below:

Table 3.1 variables operationalization

No	Variable	Variable type	Measurement
1.	Growth	Dependent	Current year gross direct premium-previous year GDP/previous year GDP*100
2.	Fintech	Independent	Measured by the Log of investments on Intagible assets
3.	Firm size	Independent	Log of total assets
4.	Firms profitability	Independent	ROA Net income/Total assets

5.	Firms Liquidity	Independent	Current ratio Current assets/current liability

The regression model for the study was as follows:

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

Where:

Y is the Gross direct premium growth

X1= Fintech

X2 = Firms Size

X3= Firms liquidity

X4 =Firms Profitability

α is a Constant term

β_1 β_2 β_3 β_4 are regression of coefficients

ε Is an error term.

3.7.1 Test of significance

To test the statistical significance of the model the study employed a parametric test. F test determined the significance level of the model which was be obtained from the analysis of variance while the t-test l determined the significance level for the coefficients of the regression.

CHAPTER FOUR: DATA ANALYSIS, RESULTS, AND DISCUSSIONS

4.1 Introduction

This section gives out the research findings as obtained from the analysis. The results are for 52 registered insurances firms for four years (2016 – 2019). The results are presented in two main areas; that is descriptive statistics results and regression results. Diagnostic statistics tests are also outlined to ensure the results of regression meet the required assumptions. All the analysis is answering the study objectives through the study questions. The presentation of the results is through the tables which are easy to explain and understand. The final aspect of the chapter is the summary discussion based on the findings.

4.2 Descriptive statistics results

The study employed descriptive statistics for all the variables to explain the data variance in each variable. The results of the analysis gave out the maximum (the highest value in each variable), minimum (the lowest value in each variable), the mean and the standard deviation (variance in each variable). The findings are exhibited in table 4.1 below:

Table 4.1 Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Growth	208	-0.9451	0.9375	0.052169	0.3064038
Firm's profitability	208	-0.0923	0.4167	0.047379	0.0639277
Firm's liquidity	208	0.4584	28.9541	9.052962	5.9704701
Fintech	208	2.3404	6.3292	4.767331	0.6761882
Firm size	208	5.4514	7.9708	6.710783	0.4976344
Valid N (list wise)	208				

The findings in table 4.1 indicate the N to be 208 which is > 35 thus meeting the required sample size. The growth of the insurance companies measured by gross direct premium has minimum value of -0.9451 and maximum value of 0.9375. The mean for the growth is 0.052169 indicating the average growth for all the insurance companies for four years was about 5.2%. The standard deviation for growth is 0.3064038 indicating the growth for the analyzed period had a small variance from one year to the other.

The firm's profitability measured by ROA has lowest value of -0.0923 and a maximum value of 0.4167. The mean for profitability is 0.047379 indicating the insurance firms to have registered a profitability of about 4.7 % for the period of four years. The standard deviation for the profitability is 0.0639277 indicating low variance across the four years. The firm's liquidity as measured by the current ratio has the lowest value of 0.4584 and the highest value of 28.9541. The mean for the firms' liquidity is 9.052962 while the standard deviation is 5.9704701 indicating high variance for the variable from one firm to the other.

Fintech as measured by the log of the total investments on the intangible assets by insurance firms has the lowest value of 2.3404 and highest value of 6.3292. The average score (mean) for Fintech is 4.767331 while the standard deviation is 0.6761882 indicating low variance for the period of four years. The size of the firm which is measured by the log of total assets has the minimum value of 5.4514 and a maximum value of 7.9708. The mean for firm's size is 6.710783 while the standard deviation is 0.4976344 indicating low variance for the Firms size from year to year.

4.3 Diagnostic tests

To meet the assumptions of parametric analysis the study carried out five diagnostic tests for the results of the regression to be appropriate. Each analysis is explained individually.

4.3. 1 Normality test

To perform this test, the study applied Shapiro –Wilk method. The rule of thumb is when the statistical significance level is > 0.05 The null hypotheses is accepted (The data is normally distributed). While when the statistical significance level is < 0.05 the null hypothesis is rejected (data is not normally distributed) .Table 4.2 show the normality test results

Table 4.2 Tests of Normality

	Shapiro-Wilk		
	Statistic	Df	Sig.
Fintech	0.998	208	0.989
Firm Size	0.998	208	0.999
Liquidity	0.998	208	0.994
Profitability	0.999	208	1

The findings of Shapiro-Wilk, as indicated by table 4.2, shows all variables are statistical significant with a p value of above 0.05 and hence the data is normally distrubuted thus rejecting the null hypothesis.

4.3.2 Multi-collinearity test

For the regression model to be effective, multi-collinearity in the data should not be identified. The application of tolerance and variance inflation factor (VIF) was applied to test the presence of multi-collinearity among the predictor variables. Tolerance values above 0.2 and VIF within range of 1 – 10 indicate the absence of multi-collinearity. The findings are exhibited in table 4.3 below:

Table 4.3 Test of Multi-collinearity

Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	Fintech	0.468	2.137
	Firm Size	0.467	2.141
	Liquidity	0.446	2.240
	Profitability	0.996	1.004

Based on the results on table 4.3, all the predictor variables (fintech, firm size, liquidity and profitability) have a tolerance values greater than 0.2 and VIF range of 1-10 thus, indicating the absence of multi-collinearity between the predictor variables.

4.6.4 Autocorrelation test

Durbin-Watson was applied for this assumption. The results are indicated by table 4.4

Table 4.4 Test of Autocorrelation

Model	Durbin-Watson
1	2.08
a. Predictors: (Constant), Liquidity, Fintech, Profitability, Firm Size	
b. Dependent Variable: Growth	

As indicated by table 4.4, the Durbin-Watson value is 2.08 which is very close to the value of 2 and therefore manifesting the absence of the autocorrelation in the data series.

4.3.4 Heteroscedasticity test

This assumption looks whether the variance of error term is homogeneous (Equal variance). If the variance is the same, the problem of heteroscedasticity is detected. The findings are exhibited in the table 4.5.

Table 4.5 Heteroscedasticity test

Test of Homogeneity of Variances				
Variable	Levene statistic	df1	df2	Sig.
Profitability	1.036	3	208	0.485
Firms liquidity	1.321	3	208	0.458
Fintech	0.509	3	208	0.715
Firm size	0.494	3	208	0.730

From table 4.5 above all the sig. value for the variables are above 0.05 indicating the assumption for homogeneity of variance to have been met.

4.3.5 Hausman test

The Hausman assumption helps in choosing the model type that is; the fixed effect model or the random-effects model. The hausman test produced a p of 0.13 which is statistical insignificant thus random effect model was preferred in the study.

4.3 Correlation Analysis

The study carried out Pearsons correlation analysis to find out the correlation between the response and predictor variables. A value of (I) indicate a perfect correlation a value of (-)

negative correlation and a value of (+) negative correlation. The results of the correlation are indicated in table 4.6 below:

Table 4.6 Correlation analysis

		Growth	Fintech	Firm Size	Liquidity	Profitability
Growth	Pearson correlation	1				
Fintech	Pearson correlation	.831	1			
Firm size	Pearson correlation	.881	.738	1		
Liquidity	Pearson correlation	.768	.150	0.729	1	
Profitability	Pearson correlation	-0.062	-0.04	-0.1	-0.036	1

Source: Research results (2021)

From the table above fintech had a positive (0.831) with the growth of insurance firms. Firm size had a positive (0.881) correlation with the response variable (growth of insurance firms). Liquidity had a positive correlation (0.768) with the growth of insurance firms and Profitability had a negative (-0.062) with the growth of insurance firms.

4.4 Regression analysis

The study deployed regression analysis to answer the study objective. The results of the regression are divided in to three categories that is model summary, the analysis of variance (ANOVA) and the analysis of the coefficients.

4.4.1 Model summary

Table 4.7 indicate the results of the model summary. The R square is 0.831 indicating that 83.1% of change in growth of insurance companies is explained by profitability (ROA), liquidity (current ratio), fintech (log of intangible assets) and firm size (log of total assets) while 16.9 % change in growth of the insurance companies is explained by other factors not considered in this

study. The R shows a strong positive relationship between the explainer variables and the response variable.

Table 4.7 model summary results

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.911[a]	0.831	0.827	0.11986
a. Predictors: (Constant), Profitability, Liquidity, Fintech, Firm size				

4.4.2 Analysis of Variance

Table 4.8 Analysis of variance

ANOVA[a]						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	14.307	4	3.577	15.721	.000[b]
	Residual	2.917	203	0.014		
	Total	17.223	207			
a. Dependent Variable: Growth						
b. Predictors: (Constant), Profitability, Liquidity, Fintech, Firm Size						

The outcome of the ANOVA displays the p value to be 0.00 which is lower than 0.05 (significance level) the F value is greater than critical value and therefore the model was statistical significance in predicting the growth of registered insurance companies in Kenya.

4.4.3 Coefficients Outcome

For the purpose of establishing the individual impact of each predictor variable to the response variable; coefficients results were used as shown in table 4.10 below:

Table 4.9 Coefficients outcome

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta (β)		
1	(Constant)	0.024	0.024		1.007	0.315
	Fintech	0.373	0.076	0.372	4.888	0.000
	Firm size	0.374	0.076	0.375	4.926	0.000
	Liquidity	0.223	0.043	0.223	5.15	0.000
	Profitability	-0.017	0.03	-0.017	-0.575	0.566
a. Dependent Variable: Growth						

The results of coefficients as exhibited in table 4.9 above indicate Fintech was found to have a positive and significance impact on the growth of insurance companies in Kenya (β 0.373, P 0.000). This demonstrate that an increase in Fintech by one unit will increase growth of insurance companies by 0. 373. The results indicate firm size to have a positive and significance impact on the growth of insurance firms in Kenya (β 0.374, P 0.000). This explains that an increase of insurance firms size by one unit (assets) will improve the growth by 0. 374. Liquidity form the results has a positive and significance effect on the growth of insurance firms in Kenya (β 0.223, P 0.000). This shows that an improvement of liquidity by one unit will result to the growth of insurance companies by 0. 223. Profitability has a negative but insignificant impact on the growth of insurance firms in Kenya (β -0.017, P 0.566). This explains that in the short term the insurance firms in Kenya use their profits for short term funding operations other than on the expansion.

The equation as from the results is:

$Y=0.024+0.373X_1+0.374X_2+0.223X_3-0.017X_4$

Where,

Y=Growth

X_1=Fintech

X_2=Firm size

X_3=Liquidity

X_4=Profitability

4.5 Discussion of the findings

From the study results, the descriptive statistics indicated all the variables used have had a small variance expect for liquidity which had higher variance. The descriptive statistics further demonstrated the general outlook of the insurance industry in Kenya in terms of profitability as measured by ROA, liquidity as measured by current assets, growth as measured gross direct premiums, size of the firm in terms of the total assets and fintech as measured by investments on intangible assets. The correlation analysis indicated a positive correlation between liquidity, fintech and firms size with the growth of insurance companies as measured by gross direct premiums while profitability displayed a negative correlation with the growth of the insurance firms in Kenya.

Regression results indicated Fintech to have a positive and significance impact on the growth of insurance companies in Kenya (β 0.373, P 0.000). This implies that an investment on the financial innovations by insurance firms will lead to their growth. This results are

complementing a report by IAIS, (2018) which indicated the adoption of fintech by organization may lead to their growth.

The regression results further indicated that the firm size to have a positive and significance impact on the growth of insurance firms in Kenya (β 0.374, P 0.000). This illustrates that when the assets of the firms increase the growth also improves. This finding are in agreement with Tien and Yang (2014) who established that the size of the firm through assets to have a direct relationship with the growth of organizations.

Liquidity from the results has a positive and significance effect on the growth of insurance firms in Kenya (β 0.223, P 0.000). This implies that when the liquidity of the insurance is good the growth improves significantly. This finding are in agreement with a study by Ogaili (2020) which indicated a positive relationship between liquidity and a firm's growth. A firm that is liquid has the potential of growing faster as compared with a firm that has low liquidity.

Profitability has a negative but insignificant impact on the growth of insurance firms in Kenya (β -0.017, P 0.566). This indicates that insurance firms in Kenya use their profitability in short term for their operations other than expansions. This finding is in agreement with Demirgunes & Ucler (2015) who indicated that a firms' profitability in the long run influences growth positively, while the profitability in short term may either have a positive or negative impact on the growth.

CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter gives out the summary of the study findings as per the study objective. The chapter also outlines the conclusion of the research. Recommendations, study limitations and suggestion for further researches is also outlined in this chapter.

5.2 Summary of The Findings

The study through descriptive statistics established a small variance on insurance companies in Kenya in terms of profitability, fintech, growth and profitability. On the liquidity the variance was high indicating how different insurance firms differed from one another with regard to their liquidity ratios. Though the analysis of correlation the study findings established the response variable (Growth of insurance firms) and the dependent variable (Fintech) to have a positive correlation. The two control variables, firm's size and liquidit had a positive correlation with the growth while the other one control variable, profitability, had a negative correlation with the growth of insurance firms.

The regression results through model summary indicated a strong positive (R=0.911) connection between the response variable and the predictor variables. The R square of 0.831 explained all the three predictor variables (fintech, firm's size, liquidity and profitability) account for 83.1% of variance in growth of insurance firms while 16.9% of variance in the growth insurance companies is accounted by other factors not included in the study model. The results of ANOVA

proved that all the predictor variables were good predictors of the growth of insurance firms in Kenya.

The coefficients values indicated a positive and significance association between fintech and growth of insurance firms. The coefficients values also indicated a positive and significance connection between the firm's size and growth of insurance companies. The results on the liquidity displayed a positive and significance impact on the growth of insurance firms. Further coefficients results indicated profitability to have negative but insignificance impact on the growth of insurance firms in Kenya.

5.3 Conclusion

The study results indicated a positive and significance effects of Fintech on the growth of insurance companies in Kenya. This implied that Fintech helps in immersing more growth opportunities for insurance firms in Kenya. The study therefore concludes that investment in financial innovations (Fintech) by firms affects their growth positively.

The study found out firm's size to have a positive and significant impact on the growth of insurance firms in Kenya. This illustrates that investments in assets helps Kenya insurance firms improve on their growth and therefore, the study concludes that the more the assets the organization has the higher the opportunities it has for its expansions.

The findings of the study indicated liquidity to have a positive and significant impact on the growth of insurance firms in Kenya. This indicate the higher the ability of paying short term obligations the insurance firms have the higher the chances of investments on its growth. The study therefore concludes that the higher the liquidity the organization has the higher the chances it has for its growth.

The results indicated profitability to have a negative but insignificant effect on the growth of insurance firms in Kenya and therefore the study concludes that, in short term organizations profitability has a

negative effect on its growth. This shows that in short term organizations use their profitability to invest on their operations instead of the expansions.

5.4 Recommendations

The study recommends that insurance business management substantially in the Fintech innovations because it has been identified to have a positive and significant effect on the growth of premiums. In addition, Fintech will improve their growth and help create a remarkable experience for their customers because financial innovations have a tool for interacting with customers through feedback. The study further recommends policymakers such as the Insurance Regulatory Authority to develop policies to improve the financial innovations in the Kenyan insurance sector.

5.5 Limitation of the study

The study carried analysis for only four years. It is unknown whether the same results will be obtained if the period is increased to more than ten years using the same variables. Further, some firms missed some values in some variables, which made the study use the values of other firms or values of the individual firms based on the previous period. This created a challenge during data analysis.

5.6 Suggestions for Further Research

The study centered on Kenya insurance firms, and therefore the study suggests future research on insurance firms outside Kenya. Further, the study suggests future studies to focus on related sectors with insurance firms such as healthcare organizations. Also, the study suggests a study to be done on the impact of Fintech on the economic growth of a country. Lastly, the study suggests a study to be carried on the impact of Fintech on customer satisfaction in organizations.

References

Abdulkadir, M. I. (2018). The Effect of Financial Technology on the Financial Performance of Commercial Banks in Kenya (Doctoral dissertation, University of Nairobi).

Attract Capital. (2019, April 30). *Business growth*. Mezzanine Debt | Mezzanine Financing | Acquisition Financing. https://www.attractcapital.com/business-growth.html

Balcilar, M., Gupta, R., Lee, C. C., & Olasehinde-Williams, G. (2020). Insurance and economic policy uncertainty. *Research in International Business and Finance*, *54*, 101253.

Bam, K. (1992). Research methods for business and management.

Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, *17*(1), 99-120.

Bharadwaj, P., Jack, W., & Suri, T. (2019). *Fintech and household resilience to shocks: Evidence from digital loans in Kenya* (No. w25604). National Bureau of Economic Research.

Brophy, R. (2019). Blockchain and insurance: a review for operations and regulation. *Journal of Financial Regulation and Compliance*.

Business Balls. (2020, September 3). *Resource-based view of the firm – BusinessBalls.com*.

Charness, N., & Boot, W. R. (2016). Technology, gaming, and social networking. In *Handbook of the Psychology of Aging* (pp. 389-407). Academic Press.

David, R. J., Tolbert, P. S., & Boghossian, J. (2019). Institutional theory in organization studies. In *Oxford Research Encyclopedia of Business and Management*.

Deloitte. (2020, December 8). Insurance outlook report 2020. Retrieved from 'https://www2.deloitte.com/ke/en/pages/financial-services/articles/ea_insurance_2020.html

Demirgunes, K., & Ucler, G. (2015). Inter-relationship between profitability, growth, and size: Case of Turkey. *Journal of Business Economics and Finance*, *4*(4).

Didenko, A. (2017). Regulating FinTech: Lessons from Africa. *San Diego Int'l LJ*, *19*, 311.

Dulock, H. L. (1993). Research design: Descriptive research. *Journal of Pediatric Oncology Nursing*, *10*(4), 154-157.

Fiala, R., & Hedija, V. (2015). The relationship between firm size and firm growth: The case of the Czech Republic. *Acta Universitatis Agriculturae et Silviculturae Mendelianae Brunensis*, *63*(5), 1639-1644.

Gall, M. D., Gall, J. P., Borg, W. R., & Mendel, P. C. (2007). *A guide for preparing a thesis or dissertation proposal in education, for Gall, Gall, and Borg'Educational research: an introduction'and'Applying Educational Research'*. Pearson Education.

Gibson, J. (2015). *The impact FinTech is having on the financial services industry in Ireland* (Doctoral dissertation, Dublin Business School).

Global FinTech Survey (2016).*How InsurTech is reshaping insurance*

Hunt, S. D., & Morgan, R. M. (2017). The resource-advantage theory of competition: A review. *Review of marketing research*, 153-205.

International association of insurance supervisors (IAIS). (2018). doi:10.1787/9789264244047-26-en

Jang, S. S., & Park, K. (2011). Inter-relationship between firm growth and profitability. *International Journal of Hospitality Management*, *30*(4), 1027-1035.

Kantarci, A. (2021, January 1). Top 6 digital transformation applications in insurance in 2021. Retrieved from https://research.aimultiple.com/digital-transformation-insurance/

Kemunto, E. R., & Kagiri, A. (2018). Effect Of Implementation Of FINTECH Strategies On Competitiveness In The Banking Sector In Kenya: A Case Of KCB Bank Kenya. *European Journal of Business and Strategic Management*, *3*(3), 29-40.

Kigochi, J. M. (2008). *A survey of operational budgeting challenges in the insurance industry in Kenya* (Doctoral dissertation, University of Nairobi, School of Business).

Kiilu, N. (2018). *Effect Of Fintech Firms On Financial Performance Of The Banking Sector In Kenya* (Doctoral dissertation, University of Nairobi).

Kothari, C. R. (2004). Sample size determination. Research Methodology. *New Age International Publications*, *1*, 74-1.

Lee, I., & Shin, Y. J. (2018). Fintech: Ecosystem, business models, investment decisions, and challenges. *Business Horizons*, *61*(1), 35-46.

Loesch, S. (2018). *A guide to financial regulation for Fintech entrepreneurs*. John Wiley & Sons.

Mokaya, B. N. (2020). *Effects of Financial Technology on the Financial Performance of Tier II Banks in Kenya* (Doctoral dissertation, United States International University-Africa).

Mugane, G. M. (2018). *Big data analytics and competitive advantage of commercial banks and fintech companies in Kenya* (Doctoral dissertation, university of nairobi).

Mugenda, O. M., & Mugenda, A. (2003). G.(1999). *Research Methods in Education*.

Mutua, R. W. (2013). *Effects of mobile banking on the financial performance of commercial banks in Kenya* (Doctoral dissertation, University of Nairobi).

Mwange, J. A. (2013). *The impact of mobile banking on financial performance of commercial banks in Kenya* (Doctoral dissertation, University of Nairobi).

Ndung'u, N. (2019). Digital technology and state capacity in Kenya. *Washington, DC*.

Nicoletti, B., Nicoletti, W., & Weis. (2017). *Future of FinTech*. Basingstoke, UK: Palgrave Macmillan.

Niraula, P., & Kautish, S. (2019). Study of The Digital Transformation Adoption in The Insurance Sector of Nepal. *LBEF Research Journal of Science, Technology and Management*, *1*(1), 43-60.

Nzioka, A. (2017). *Strategic Responses to Environmental Challenges and Competitive Advantage of Fintech Firms in Kenya* (Doctoral dissertation, University of Nairobi).

Ogaili, S. H. (2020). The Effect of the Relationship of Growth Return and Market Value on the Relationship of Liquidity and Company Value Growth. *Journal of Advanced Research in Law and Economics (JARLE)*, *11*(48), 503-523.

Ondari, J. K., Koech, C. S., Otieno, S., & Economics, K. (2011) moderating effect of firm size on the relationship between strategy implementation drivers and performance.

Philippon, T. (2016). *The fintech opportunity* (No. w22476). National Bureau of Economic Research.

Puschmann, T. (2017). Fintech. *Business & Information Systems Engineering*, *59*(1), 69-76.

Water house Coopers, P. (2016). Opportunities await: How InsurTech is reshaping insurance. *Global FinTech Survey*.

Razaq, I. T., & Akinlo, A. E. (2017). The interrelationship between Size, growth, and Profitability of Non-Financial Firms in Nigeria. *European Journal of Business and Management*, *9*(7), 76-86.

Rodríguez Cardona, D., Werth, O., Schönborn, S., & Breitner, M. H. (2019). A mixed methods analysis of the adoption and diffusion of Chatbot Technology in the German insurance sector.

Sun, Y. (2013). A heteroskedasticity and autocorrelation robust F test using an orthonormal series variance estimator. *The Econometrics Journal*, *16*(1), 1-26.

Salman, A. (2019). Effect of capital structure on corporate liquidity and growth: evidence from the tobacco industry in Pakistan. *Academy of Strategic Management Journal*, *18*(2), 1-20.

Sauro, J. (2019). 10 Things to Know about the Technology Acceptance Model. *Measuring U*.

Sedgwick, P. (2013). Convenience sampling. *Bmj*, *347*.

Sheytanova, T. (2015). The accuracy of the Hausman Test in panel data: A Monte Carlo study.

Song, M., & Chen, Y. (2014). Organizational attributes, market growth, and product innovation. *Journal of product innovation management*, *31*(6), 1312-1329.

Tien, J. J., & Yang, S. S. (2014). The Determinants of life insurer's growth for a developing insurance market: domestic vs foreign insurance firms. *The Geneva Papers on Risk and Insurance-Issues and Practice*, *39*(1), 1-24.

Truong, T. (2016). How FinTech industry is changing the world.

Vugec, D. S., Spremić, M., & Bach, M. P. (2017). IT governance adoption in banking and insurance sector: Longitudinal case study of cobit use. *International Journal for Quality Research*, *11*(3).

Wani, T. A., & Ali, S. W. (2015). Innovation diffusion theory. *Journal of general management research*, *3*(2), 101-118.

Williams, C. (2007). Research methods. *Journal of Business & Economics Research (JBER)*, *5*(3).

Appendix 1: Registered Insurance Firms

No.	INSURANCE COMPANY
1	AAR INSURANCE KENYA
2	AFRICAN MERCHANT ASSURANCE
3	AIG INSURANCE COMPANY
4	ALLIANZ INSURANCE COMPANY
5	APA LIMITED COMPANY
6	APA LIFE ASSURANCE COMPANY
7	BARCLAYS LIFE ASSURANCE KENYA LIMITED
8	BRITAM GENERAL INSURANCE LIMITED
9	BRITAM LIFE ASURANCE COMPANY LIMITED
10	CANNON ASSURANCE COMPANY
11	CAPEX LIFE ASSURANCE COMPANY LIMITED
12	CIC LIFE ASSURANCE COMPANY
13	CIC GENERAL INSURANCE COMPANY
14	CORPORATE INSURANCE COMPANY
15	DIRECTLINE ASSURANCE COMPANY
16	FIDELITY SHIELD INSURANCE
17	FIRST ASSURANCE COMPANY
18	GA INSURANCE COMPANY
19	GA LIFE ASSURANCE LIMITED COMPANY
20	GEMINIA INSURANCE COMPANY
21	ICEA LION GENERAL INSURANCE LIMITED
22	ICEA LION LIFE ASSURANCE COMPANY
23	INTRA-AFRICA ASSURANCE
24	INVESCO ASSURANCE COMPANY
25	JUBILEE INSURANCE COMPANY

26	KENINDIA ASSURANCE COMPANY
27	KENYA ORIENT INSURANCE COMPANY
28	KENYA ORIENT LIFE ASSURANCE COMPANY
29	LIBERTY LIFE ASSURANCE KENYA LIMITED
30	MADISON INSURANCE COMPANY
31	MAYFAIR INSURANCE COMPANY
32	METROPOLITAN LIFE ASSURANCE LIMITED
33	OCCIDENTAL INSURANCE COMPANY
34	OLD MUTUAL ASSURANCE COMPANY
35	PACIS INSURANCE COMPANY
36	PHOENIXOF EAST AFRICA
37	PIONEER GENERAL INSURANCE COMPANY
38	PIONEER ASSURANCE COMPANY
39	PRUDENTIAL LIFE ASSURANCE COMPANY
40	RESOLUTION INSURANCE COMPANY LIMITED
41	SAHAM ASSURANCE
42	SANLAM LIFE INSURANCE COMPANY
43	SANLAM GENERAL INSURANCE COMPANY
44	TAKAFUL INSURANCE OF AFRICA
45	TAUSI ASSURANCE COMPANY
46	THE HERITAGE INSURANCE COMPANY
47	THE KENYAN ALLIANCE INSURANCE
48	THE MONARCH INSURANCE
49	TRIDENT INSURANCE COMPANY
50	UAP INSURANCE COMPANY
51	UAP LIFE ASSURANCE COMPANY
52	XPLICO INSURANCE COMPANY

Appendix 1: Raw Data

Growth	Fintech	Firm Size	Firms Liquidity	Firms Profitability
0.4856	5.4695	6.7127	9.6378	0.0620
-0.0393	4.1270	6.5987	9.3143	0.0523
-0.0411	4.6909	6.6239	5.5782	0.0795
-0.9451	4.3248	6.0303	14.4493	0.0270
-0.0267	6.3292	7.1562	14.4493	0.0806
0.1797	4.1918	6.5998	4.0835	0.0078
1.4916	4.1918	6.2110	4.4709	0.0270
-0.1383	5.8828	6.9763	7.5518	0.0666
0.4129	6.0034	7.7232	28.3742	0.0819
0.6393	4.8417	6.6062	3.8046	-0.0105
-0.2907	4.8417	5.6736	1.0087	0.0054
0.0245	4.1260	6.9218	10.7431	0.0809
0.0692	5.6829	7.3082	12.5939	0.0332
0.5869	4.1685	6.3509	5.1251	0.0726
0.1639	4.9564	6.7140	4.9684	0.0536
-0.0426	4.8256	6.4415	11.0902	0.0606
0.0876	4.6731	6.7458	4.9684	0.0523
0.1221	5.5342	6.9318	2.8984	0.0856
-0.0194	3.1143	6.6150	2.8984	0.0025
0.5310	3.0715	6.6986	5.5655	0.1028
0.1415	5.4280	6.9867	4.3483	0.0973
-0.1504	4.4620	7.7570	4.3483	0.0107
0.0780	4.5817	6.2441	17.8301	0.0343
0.0030	5.6573	6.4919	7.5557	0.0140
1.0873	5.5920	7.8218	17.3705	0.0379
1.4935	4.8052	7.5293	10.1960	0.0108
0.0425	5.1992	6.4798	4.7709	0.0633
-0.4354	3.1948	5.7437	10.1960	0.1109
0.9012	4.9885	7.3704	27.2926	0.0105
1.0437	5.2051	7.1036	12.8103	0.0114
0.1754	4.2519	6.6016	4.3813	0.1182
0.0009	4.1573	6.0184	10.5765	0.0350
0.0717	5.0080	6.4590	8.1959	0.0794
0.2442	3.6847	7.1283	8.8393	0.0151
0.0344	4.8557	6.3126	5.9036	0.0328

-0.1635	4.5940	6.1925	14.9254	0.0000
-0.9383	4.1256	5.8146	28.9541	0.0140
7.6153	4.1256	6.6546	5.3364	0.0615
0.1965	4.5678	5.9654	15.5704	-0.0656
0.3266	5.4465	6.6503	1.3643	0.0000
0.4981	4.5187	6.4067	7.6947	0.0243
0.0148	5.3116	7.3863	13.1646	0.0259
0.0751	4.0696	5.4514	7.2188	2.2281
0.1174	4.7042	6.2315	1.9308	0.1631
0.1071	4.7176	6.2977	13.1215	0.1338
0.0255	4.5523	6.7736	8.1763	0.1496
0.5949	4.7855	6.7558	5.0252	0.0104
0.6236	4.6852	6.2630	8.0584	0.0233
0.3621	3.7279	6.6294	1.9916	0.0328
0.3491	5.5295	7.2056	4.8197	0.0678
4.3170	5.5295	7.0342	17.5759	0.0156
-0.2940	3.7448	6.3206	3.6402	0.0156
-0.1063	5.3331	6.5548	10.3841	0.0814
-0.1999	5.1448	6.5882	8.7594	0.0011
0.0152	2.9886	6.6741	2.5678	0.1213
4.5009	4.8765	6.0738	4.9158	0.0011
-0.8340	5.3257	7.1517	19.2938	0.0814
5.7867	4.0157	6.6705	9.5585	0.0108
0.1018	4.0157	6.4476	9.5585	0.0276
0.1494	5.9358	7.0252	5.8986	0.0514
0.0651	5.9936	7.8006	16.7023	0.0079
-0.2588	5.0073	6.3829	11.9478	0.0424
4.5314	5.0073	5.8250	2.7646	-0.0191
0.1246	3.8505	7.0122	11.0673	0.0112
0.2062	4.6441	7.0591	13.9057	0.0293
0.0396	4.1685	5.9634	4.8056	0.0542
-0.0430	4.8413	6.7909	11.0619	0.0448
0.3915	4.9321	6.4912	11.0619	0.0499
-0.2188	5.0256	6.7124	3.1864	0.0348
0.1734	5.5309	6.9842	3.5112	0.1080
0.0611	3.9946	6.7774	14.4983	0.0066
0.4295	3.9353	6.7865	14.4983	0.0654
-0.0319	5.3576	7.0097	5.5440	0.1155
0.3664	4.2608	7.8440	16.7435	0.0083

0.0199	4.5926	6.2698	16.7435	0.0385
-0.1003	5.6972	6.5254	5.8921	0.0104
-0.0135	5.5227	7.8837	13.5443	0.0261
0.1027	4.8046	7.5826	13.5443	0.0108
-0.2526	5.1078	6.3913	7.8945	0.0581
0.4585	2.3404	5.8662	23.2016	0.0246
0.0409	5.1097	7.3891	23.2016	0.0175
0.1916	5.3824	7.1572	19.2563	0.0050
0.0562	4.0473	6.6565	6.5210	0.0985
0.5487	3.6971	6.4367	7.3238	0.0136
0.2776	5.1192	6.5272	8.0516	0.0579
-0.0582	4.3009	7.1659	8.5827	0.0212
0.1679	4.8652	6.3642	5.5066	0.0301
0.5152	4.5936	6.1839	11.3448	0.0000
-0.9383	4.5587	6.0197	4.1906	0.0560
-0.0148	3.9836	6.7234	16.3058	0.0107
1.0039	4.6120	6.1391	10.5492	0.0000
0.2602	5.4579	6.5279	1.4426	0.0000
0.3082	5.0097	6.5069	4.7103	0.0326
0.0148	5.2671	7.3940	8.9736	0.0041
0.0751	4.3070	6.4297	4.6765	0.2976
0.0433	4.9566	6.2712	4.6445	0.0448
0.1015	4.6961	6.3516	11.5823	0.1469
0.1129	4.7067	6.8635	5.0100	0.1218
0.0146	4.8063	6.7892	6.9778	0.0510
0.1338	4.8121	6.3146	9.5173	0.0630
0.0527	4.8439	6.6416	1.2564	0.0081
-0.7846	5.5045	7.1930	6.7663	0.0849
2.7974	5.5045	7.0416	12.7831	0.0692
-0.3457	4.4825	6.3590	3.8613	0.0310
-0.0328	5.3270	6.5816	7.0315	0.0012
-0.1387	4.9952	6.5305	6.9286	0.0117
-0.0244	4.0899	6.7094	2.7071	0.1087
1.0291	5.5199	6.1274	2.2248	0.0010
5.4025	5.3425	7.1202	21.2406	0.0665
-0.8202	3.7147	6.7274	21.9976	0.0098
0.2872	3.7147	6.5229	5.0788	0.0377
0.0008	5.7914	7.0171	4.2186	-0.0923
0.1269	6.0133	7.8492	8.5171	-0.0136

-0.2507	4.7797	6.3687	7.3244	0.0122
0.0657	4.7797	5.9062	8.5171	-0.0171
0.2409	3.6772	7.0858	16.5911	0.0094
0.0068	5.0326	7.0549	24.0220	0.0555
-0.5721	4.2482	6.3608	7.6505	-0.0360
-0.0271	4.7721	6.7456	12.5425	0.0526
-0.0485	4.8413	5.6849	15.9728	0.4167
0.2024	5.0322	6.6696	3.0986	0.0475
0.0769	5.5743	7.0195	4.0036	0.1123
0.0330	4.0009	6.8921	4.0036	0.0067
0.2586	3.8580	6.8676	7.0953	0.0531
-0.0809	5.3145	6.9880	7.4346	0.0859
-0.0693	4.1681	7.9034	16.9106	0.0075
0.1733	4.5926	6.2698	16.9106	0.0075
-0.2604	5.7220	6.5164	5.2891	0.0066
-0.4754	5.4934	7.9326	23.5923	0.0336
-0.6271	4.7346	7.6251	16.2332	0.0102
-0.2337	4.8704	6.3260	14.5403	0.0129
0.4134	4.1020	5.9985	14.5403	0.0084
0.0020	5.1837	7.3748	21.6187	0.0120
-0.3144	5.3393	7.2389	19.0812	0.0000
0.2357	3.6909	6.7109	8.1620	0.1080
-0.5989	3.5587	6.3873	3.2969	0.0527
0.0019	5.1083	6.5521	9.5264	0.1080
0.0547	4.2091	7.1460	10.0913	0.0349
0.0741	4.8729	6.3403	3.5169	0.0472
0.0000	4.5936	6.1839	11.3448	0.0472
0.8139	4.7363	6.0787	5.4854	0.0531
0.0681	3.8011	6.8486	3.7794	0.0090
0.2599	4.5154	6.1672	8.4220	0.0641
0.1524	5.4113	6.6634	1.8446	0.0435
0.0675	5.4302	6.4639	7.0640	0.0435
-0.0459	4.1776	7.4319	14.3531	0.0072
0.0223	4.1776	7.4319	7.3492	0.0072
0.0586	4.9894	6.3270	3.1872	-0.0113
0.1066	4.7376	6.3516	10.8891	-0.0113
-0.0854	4.8138	6.8726	6.2086	0.0746
-0.3542	4.7720	6.7847	7.8269	0.0017
0.0127	4.8677	6.4012	11.2358	0.0771

-0.6058	4.8439	6.6210	0.7901	0.0049
2.9124	5.5014	7.1639	10.9377	0.0212
-0.7716	5.5014	7.0517	16.3690	0.0223
0.4544	4.6076	6.3824	5.1955	0.0141
0.0451	5.2008	6.6051	4.0386	0.1879
-0.3235	4.6419	6.5321	4.4788	0.0001
-0.0045	3.9676	6.7158	2.5641	0.0801
0.2939	5.5715	6.3082	2.3505	0.0007
-0.0232	5.5025	7.1287	12.4550	0.0907
0.0164	5.5025	6.7756	25.0801	0.0124
0.3371	5.5025	6.6085	4.3084	0.0129
0.0199	5.7732	7.0141	5.6093	0.4079
0.1612	6.0177	7.9432	5.6093	0.0480
-0.1346	4.7946	6.3515	2.7519	0.0892
-0.0701	3.5367	5.9440	5.9827	-0.0574
-0.0004	3.4168	7.1672	16.1554	0.0543
0.0435	5.0247	7.0814	17.2683	0.0661
2.3758	4.6598	6.3917	6.8486	-0.0356
0.1168	4.8112	6.7449	7.2857	0.0159
0.0596	4.8071	6.4920	11.9854	0.0591
-0.0064	4.9978	6.7209	2.9906	0.0395
0.0932	5.5967	7.0618	4.0228	0.1171
0.7489	3.9141	7.0463	7.3609	0.0076
0.3678	5.5959	6.9140	7.3609	0.0546
0.0440	5.3920	7.0384	4.6554	0.1234
0.0765	4.2315	7.9708	4.6554	0.0074
0.0025	5.0517	6.3188	23.9717	0.0908
0.0000	5.7220	6.5164	5.2891	0.0908
-0.0283	5.4185	7.9543	5.2891	0.0356
1.8307	4.6650	7.6772	20.3608	0.0000
-0.0992	4.9230	6.3551	2.9912	-0.0194
0.1674	3.9864	6.1094	2.9912	0.0535
0.1226	5.2140	7.3906	27.4852	0.0195
0.7621	5.5886	7.2733	13.1262	0.0004
0.0042	3.8338	6.7492	7.6604	0.1033
2.6194	3.5587	6.3873	6.4473	0.0527
0.0799	5.0986	6.5846	6.9039	0.1039
0.0684	3.9644	7.1853	7.5065	0.0160
0.1329	4.8240	6.3577	3.1349	0.0000

0.0000	4.5936	6.1839	11.3448	0.0000
0.4539	4.7945	6.1477	8.3386	0.0374
-0.0161	3.5807	6.8819	3.5026	0.0187
0.5935	4.6964	6.2535	6.7911	0.0379
-0.0604	5.3010	6.7139	1.5428	0.0379
-0.0871	5.0161	6.4293	4.6989	0.0461
0.0129	5.0304	6.3205	12.3662	0.0125
0.2978	5.0304	6.4632	9.9875	0.0079
0.3345	5.0264	6.3885	3.0115	0.0125
0.0251	4.7634	6.4329	15.3831	0.1256
0.0366	5.0167	6.8963	8.4117	0.1166
0.9375	4.9229	6.8615	4.5891	0.0098
0.0975	4.9468	6.4361	10.6793	0.0264
0.2227	1.9294	6.6145	0.4584	0.0377
0.0126	5.5039	7.1654	6.0031	0.0918
0.0716	5.5039	7.1045	19.3444	0.0173
0.2316	4.7164	6.4447	6.8899	0.0172