

**DIGITAL TRANSFORMATION AND ORGANISATIONAL PERFORMANCE OF
GENERAL INSURANCE COMPANIES IN KENYA: A CASE STUDY OF CIC
GENERAL INSURANCE COMPANY LIMITED**

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**A RESEARCH PROJECT SUBMITTED TO THE SCHOOL OF MANAGEMENT
AND LEADERSHIP IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE AWARD OF THE DEGREE OF MASTER OF MANAGEMENT AND
LEADERSHIP OF THE MANAGEMENT UNIVERSITY OF AFRICA**

OCTOBER, 2022

DECLARATION

This research project is my original work and has not been presented for the award of a degree in any other University.

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

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DEDICATION

This work is dedicated to my caring and loving family for their support and unending encouragement to be the best that I could be. God continue to bless you all. To my late Mother and Dad who sacrificed a lot to see me through the education system.

ACKNOWLEDGEMENT

I wish to thank the Almighty God for the gift of abundant life and enabling me with good health in writing this paper. My appreciation is extended to the Management University of Africa for the opportunity to pursue this course. I am grateful to the various respondents in the Insurance Industry who took their time to assist in the Research. I wish to express my heartfelt gratefulness to my supervisor Mr. David Kanyanjua for the suggestions and helpful guidance in the course of the research project I appreciate the patience, courage and constant guidance towards the correction of this research project. Lastly, I express my sincere gratitude to my family for giving me support and great patience.

ABSTRACT

The main purpose of the study was to establish the role of digital transformation in the organizational performance of the general insurance industry in Kenya with focus to CIC General Insurance. The researcher investigated Big Data Analytics, Internet of Things, Process Automation, and Artificial Intelligence on the performance of CIC general insurance company in Kenya. This study provides more information towards the status of digital transformation and performance in the insurance industry in Kenya and also helps policy makers in the insurance firms on areas to consider towards effectively improving the various aspects of digital transformation on their performance. The study validates previous research done in other markets or sectors and its similarities or differences in relation to the local insurance industry. The study was anchored on Resource-Based Theory, which explains the effect of utilization of available resources and their impact on the performance of an organization. Diffusion of Innovations theory as well as Dynamic Capability Theory supported the Study. The study used a descriptive research design. The study targeted 315 employees of CIC General Insurance Company. A stratified random sampling method was used where 65 respondents, representing 20% of the entire target population, formed the sample size of the study. The researcher used structured questionnaires to collect data from respondents. Statistical package for social sciences was used for data analysis to aid generation descriptive statistics and inferential statistics to help obtain results of multiple linear regression and ANOVA results. The study established that there was a linear and significant relationship between the four variables and the performance of the general insurance companies in Kenya. The four variables 57.3% of Digital Transformation. Digital Transformation was found to have a big impact on the overall performance of general insurance companies in Kenya. The study established that big data analytics contribute 21.8% of the Digital Transformation, 26.1% is as a result of the internet of things. Process automation influenced around 34.3% of the and artificial intelligence around 29.7% of the digital transformation. The study established that a company gathers and stores data from various sources, both internal and external. The study also found that big data analytics contributes to the minimization of fraud cases in claims. The study also found that IoT led to better risk assessment and that internet of things has enhanced better service quality. Likewise, the study established that process automation has reduced manual tasks in service delivery. Finally, the study found that artificial intelligence has enhanced better decision making and that artificial intelligence can lead to reduced claims cost management. The study also concluded that there was a linear relationship between big data analytics, the internet of things, process automation, artificial intelligence, and the performance of general insurance in Kenya. The study recommends that insurance firms should embrace big data analytics in their operational activities. To get insurance firms on the path to greater success in the area of big data management initiatives, there should be more emphasis on understanding where a company really is, where it needs to be, and how to start in order to improve its business value. The study recommends that insurance firms consider IoT as a tool for gaining competitive advantage in the insurance sector. On process automation, the study recommended that establishing business process automation requires one system that should be dependable and one that will increase productivity, performance, and reduce cost. It makes it possible for insurers to use machine learning, data modeling, and predictive analysis across the entire insurance value chain. This has led to a better bottom line and happier customers

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LIST OF ACCRONYMS AND ABBREVIATIONS

AI:	Artificial Intelligence
AKI:	Association of Kenya Insurers
BDA:	Big Data Analytics
BSC:	Balance Scorecard
DT:	Digital Transformation
DTF:	Digital Transformation Framework
IT:	Information Technology
IoT:	Internet of Things
IFRS:	International Financial Reporting Standards
IRA:	Insurance Regulatory Authority
RBV:	Resource Based View Theory

OPERATIONAL DEFINITION OF TERMS

Artificial Intelligence:	Ways in which systems or machines are able to learn by themselves to come up with predictions which will in turn make decision making simpler. Machines being able to determine a most suitable insurance cover for a customer.
Big Data Analytics:	Refers to ways of structuring the data collected in reports which can be used to make decisions.
Digital Transformation:	Refer to use of modern ways of operation by use of technology and technology capabilities
Internet of Things:	IoT is the terms used for networks of physical objects in other words (“things”) that could connect and exchange data with other devices and or systems over the internet. A good example is a mobile phone and the company system main operating system.
Organizational Performance:	Refer to achievement of set targets whether financial or Non-financial
Process Automation:	Where manual processes are reduced in favor of self-running processes which have reduced human intervention.

CHAPTER ONE

INTRODUCTION

1.0 Introduction

This chapter contains the study background. This chapter is divided into the following sub sections, that is, the background of the study; the problem statement; the study objectives; the research questions; and the significance as well as the scope of the research.

1.1 Background of the Study

The study focused on how the various aspects of digital transformation have an impact on the performance of general insurance companies in Kenya. For the purpose of this study, the aspects of digital transformation are the internet of things; big data analytics; artificial intelligence and process automation. The impact can be independent or in relation to the other aspects. For instance, the internet of things can have an impact on performance. But for it to have an effect, it needs to be paired with big data analytics.

The digital transformation of firms and processes is a key technological development (Leviakangas, 2016). The transfer of analog data into digital languages is known as digitalization (digitization). This, in turn, enhances customer-company connections, adding value to the economy or society as a whole. Furthermore, advancements in the service business are enabled by synergies between digital services and other technologies such as Artificial Intelligence (AI) or the Internet of Things (IoT). According to Reis et al. (2019), firms are also seeking for new ways to make money and have identified competitive advantages by incorporating new digital practices into their industrial operations.

1.1.1 Digital Transformation

Hess et al. (2016) described DT as everything about the adjustments that technologies can make to a company's business or operational model, organizational structures, or products. This is arguably the most significant management challenge facing businesses now and in the near future. For technological advancements to fully manifest their potential transformational impact, trained workforces and executives are required. Consequently, technology and people are both required for digital transformation (Nadkarni & Prugl, 2021).

In comparison to other technology-driven advancements, cloud computing, big data analytics and mobile technologies, the Internet of Things (IoT), data storage, and information distribution have a lot more technological power and influence. The earliest corporate transformations were typically concerned with implementing internal management information systems, such as Enterprise Resource Planning (ERP) or Customer Relationship Management (CRM) to execute their processes and store data. They were only permitted to enhance internal business procedures of the corporation (Li et al., 2018). Big data analytics and Internet of Things (IoT) devices have sparked innovations that go far beyond internal process optimization and may significantly alter company models (Rayna & Strukova, 2016).

1.1.2 Big Data Analytics

Big data analytics is the process of combining, accessing, and reporting on all of the available data (Ji-fan Ren et al., 2017). Filtering, comparing, and reporting on insights that were not feasible with earlier data technologies are used to achieve this. BDA and other technologies that boost data collecting and arrange its dissemination throughout an organization should enhance the use of this data in decision-making procedures.

By using a BDA system, this should ultimately improve decision quality and increase organizational productivity. Additional IT resources, such as transactional Enterprise Resource Planning (ERP) systems or customer relationship management (CRM) systems that can serve as data sources, are needed for the development of analytical models and the visualization of huge datasets. Additionally, data scientists who are proficient in BDA techniques can identify patterns and trends in vast amounts of data (Garcia et al., 2019).

1.1.3 Internet of Things

The Internet of Things (IoT) can be termed as the Industrial Internet or Internet of Everything. This is a new technology model envisioned as a global linkage or network of devices and machines capable of networking with each other. The Internet of Things is known to be one of the most significant areas of future technology, and it is getting a lot of attention from many different industries (Lee & Lee, 2015).

Nowadays, there is stiff competition among companies, which emanates from the pressures of fast-changing technology heightened by global challenges. The power of technological changes and global challenges illustrates the manufacturing industry's prerequisite to act fast

in transmitting materials. A more multifaceted payment system and product life cycles have been intertwined. Thus, superior and higher technology integration is a prerequisite to fulfill sophisticated customers' demands (Müller et al., 2016). A company's accomplishment is not being determined by merely responding to their customers or their organization's needs; they also should anticipate the future of the trend. Due to numerous technological pressures, the development of the internet has overwhelmingly impacted a company's attitude to production. Thus, organizational and operational structures have been strongly reshaped (Müller et al., 2016).

1.1.4 Process Automation

Process automation is use of technology to automate complex processes and manual repetitive processes. It typically has three functions, centralizing information, automating processes and reducing the necessity for input from people. It is designed to do away with inefficiencies, reduce errors and mistakes and loss of data. Process automation increases speed of processing transparency and communication across departments. (Pareek et al., 2020).

1.1.5 Artificial Intelligence

Artificial intelligence could be termed as the simulation of human intelligence processes by machines, for example computer systems. Some applications of AI includes natural language processing, expert systems, machine vision and speech recognition. Machine learning, smart robotics, object recognition, recommendation engines, natural language processing, virtual assistants, context awareness, and predictive analytics Application Programming Interfaces (API). Machine learning is a subdivision of AI that uses computer databases to learn and advance upon them with no explicit coding and is able to process huge amounts of data.

In most cases, a set of training data is usually used in teaching the machine learning system how to identify the correct output for a specified input and thus improve continuously. Smart Robots include smart robotic process automation with AI solutions, enabling you to automate business processes speedily. Insurers regularly handle a remarkably high volume of business processes, especially in claims processing and underwriting. They also give out policy quotes by hand, which can cause delays and hurt customer satisfaction, new business, and, in the long run, profits. Robotic process automation uses intelligent robots called "virtual

workforces" that can interact with software applications like Enterprise Resource Planning (Dick, 2019).

1.1.6 Organizational Performance

Measuring and determining the performance of a company in most cases has been a challenging topic for researchers and scholars. Achieving internal and external organizational goals are the outcomes for performance of a company (Lin, et al., 2018). Murphy (2016) contends that the performance of a company is many-sided and may entail finance, production, departmental, marketing or linked to growth and profit. Measurement of performance can be done by use of objective or subjective indicators. Rosli and Sidek (2013) identify that based on the goals of an organization, many approaches are incorporated by various companies for purposes of measuring and determining performance.

To measure and determine the performance of a company, the financial means and non-financial ones can be employed (Bakar & Ahmad, 2015). A great number of companies generally prefer using financial methods of measuring and determining performance. The reason for that is, it provides the company critical information regarding what is happening currently and aids in implementing growth strategies. Net profit after tax, return on Investment (ROI) and return on Assets (ROA) tend to be frequently applied methods for measuring performance of a company Tavitiyaman (2012). Nevertheless, other measures used in performance measurement involves competitive status, satisfaction of stakeholders, share of the market, productivity, growth and profitability (Marques, 2015). Further, some researchers have recommended some indicators like having the capacity of combining non-financial measurements towards meeting environmental changes in the exterior and interior of the organization (Krager & Parnell, 2016).

The study adopted the Balance Score Card (BSC) as the most suitable method to measure the impact of digital transformation across the four dimensions of firm performance. The BSC is a way of measuring organizational, departmental, or business unit success while balancing short-term actions and long-term goals. The following different measures of success are taken into account; financial aspect, customer aspect, internal operations, and human resource systems and development (learning and growth). These are tied to the firm's strategy and to the measures of action. Much of the success of the balance scorecard will depend on how the

measures have been agreed upon, their implementation, and how they are acted upon (Kaplan and Norton, 2001).

The financial performance measures would define the long-term objectives of the corporate unit (Kaplan & Norton, 1992). The performance measures within this perspective include enhanced cost structure and better asset utilization using the efficiency improvement strategy. Improved customer value and expanded income opportunities through revenue growth. The financial perspective focuses on cost efficiency, which is the ability to give customers more value for less money while maintaining stakeholder value (Kairu et al., 2013).

The customer perspective is the capability of the organization to deliver excellent goods and or services, the efficiency of their delivery, and the overall client service and satisfaction. This will result from quality, price, availability, functionality, selection, partnerships, service, and brand value propositions, which will lead to improved customer acquisition and loyalty. Customers' concerns fall into five groupings, namely quality, cost, time, performance, and service. Satisfied customers buy a product more than once, talk positively to others about the product, pay less attention to other competing brands or advertisements, and buy other products or services from the company (Kairu et al., 2013).

According to Kairu et al. (2013), the internal processes perspective will focus on the internal business outcomes that lead to customer satisfaction and financial success. For the organization to meet their objectives as well as the customers' expectations, they must identify the vital business processes in which they must essentially excel. The internal processes perspective focuses on the efficiency of organization processes and procedures. The reasoning supporting this perspective is that the customer focus measures are critical. However, this should translate into actions of what the organization must and needs to do internally for it to meet its customers' needs and expectations (Kaplan & Norton, 1992).

The learning and growth perspective of the BSC examines the abilities of employees, which includes talents, skills, knowledge, and training; the quality of information systems, which includes the IT systems, networks, and databases; and the effects of organizational culture, alignment, and teamwork, all of which are aimed at supporting the attainment of the organizational objectives (Kairu et al., 2013). Further, the organizational processes will only

succeed if adequately motivated and skilled employees are provided with timely and accurate information.

1.1.7 Background of the Insurance Industry in Kenya

According to the Insurance Regulatory Authority (IRA) 2020 Annual Report, there were 56 insurance companies, 5 reinsurance companies, 18 reinsurance brokers, 34 medical insurance providers, 150 insurance investigators, 128 motor assessors, 33 insurance surveyors, 31 loss adjusters, 11 claim settling agents, 10 risk managers, and 11,273 insurance agents fully regulated by IRA. Furthermore, there were 3 regional reinsurers regulated by regional charters (PTA Reinsurance, Africa Reinsurance, and Africa Trade Agency).

The gross premiums were at Kshs. 234.78bn in the year 2020, as compared to 229.5bn in the year 2019, a 2.3% growth. In Africa, Kenya was ranked fourth in terms of gross premium written income after South Africa, Morocco, and Egypt. In 2020, the insurance industry's net profit decreased significantly by 57.7% from Kshs 15.12 billion in 2019 to Kshs 6.3 billion in 2020. In terms of insurance penetration (this is the ratio of gross direct insurance premiums versus the country's GDP), the ratio declined to 2.17% in 2020 as compared with 2.34% in 2019. The world's average insurance penetration stood at 7.4% in 2020.

1.1.8 CIC General Insurance Company

According to their website (<https://cicgbportal.cic.co.ke: About Us>), CIC Group's operations in Kenya started in 1968 when it was a department within the operations of the Kenya National Federation of Co-operatives. The department was registered and as well licensed as Co-operative Insurance Services Limited in 1977 as a composite insurance company to write all classes of insurance business within the target market of the cooperative movement.

The company changed its name to Co-operative Insurance Company of Kenya Limited (CIC) in 1999 and later to CIC Insurance Group Limited in 2010. This development was part of its preparation for the de-merger of the life and general business operations. The Group was listed on the Nairobi Securities Exchange (NSE) in the year 2012. This listing made it the 6th insurance company to be on the Nairobi Securities Exchange and the 60th company to be listed.

In 2014, the CIC Group declared its aim of expanding to Uganda, South Sudan, Rwanda, Malawi, and Tanzania. A greenfield operation was set up by the group in the South Sudanese market in which it holds 69 per cent of issued capital in a new local unit while the Cooperative Bank of South Sudan acquires the remaining 31 per cent. In Uganda, the CIC Group is affiliated with the Uganda Cooperatives Savings and Credit Union and established an insurance company in which the CIC Insurance Group owns 40 per cent of the unit. CIC Group has its footprint in Malawi as well.

The group's headquarters are situated in CIC Plaza, Upperhill, Mara Road in Nairobi, Kenya. CIC Insurance Group is a prominent micro and co-operative insurance provider within Kenya together with its affiliates, CIC General, CIC Life, and CIC Asset Management. With 3,878 shareholders, Ksh 2.1 billion in capital, and 1.3 million clients, the group is one of the most successful and fastest-growing insurance companies in Kenya. It is also the largest co-operative insurer in Africa.

The focus of this study will be on CIC General Insurance. CIC General Insurance is the largest general business insurer in the Kenyan market, with a market share of 7.8% and a vast branch network of 27 branches spread across the country. CIC is the undisputed leader in motor commercial and motor private classes of insurance. The company has consistently appeared among the top 5 largest insurance companies in Kenya. However, similar to most of the other general Insurance companies in Kenya, the company has made Underwriting losses in the last several years. (AKI Annual Reports, CIC Group Annual Report and Financial Statements, 2021).

1.2 Statement of the Problem

As per Association of Kenya Insurers (AKI) – annual reports, the insurance industry has gradually dropped from making non-life underwriting profits to underwriting losses within the last 10 years. Overall non-life underwriting profit was Kes.1.2 billion in 2010, Kes.2.8 billion profit in 2011, Kes.2.8 billion profit in 2012, Kes 2.23 billion profit in 2013, Kes 18.96 million profit in 2015, Kes 2.1 billion loss in 2016, Kes 1.013 billion loss in 2017, Kes 1.8 billion loss in 2020. Definitely, unless ways are devised to bring the underwriting losses down, the long-term survival of the insurance industry in Kenya is at a big risk.

CIC General has made losses over the last several years, in 2021 they had Underwriting loss at kshs. 226m, in 2020 a loss at kshs.450m, in 2019 a loss of kshs. 458m, in 2018 a loss of kshs. 38m and in 2017 a loss of kshs 24m. CIC General being a major player in the general insurance Industry at a market share of 7.33%, kshs. 11.4bn in 2021 and consistently being top 5 in terms of gross written premium over the last 5 years as per AKI Annual report, then the study on CIC would give an indication of what could be happening in most of the other general insurance companies in Kenya.

The above challenges and analysis from various industry reports motivated this study with respect to insurance companies in Kenya towards establishing whether digital transformation could have any significant role in turning around the performance of the general insurance industry in Kenya, both financially and non-financially. This study sought to establish digital transformations and performance of general insurance companies in Kenya.

The researcher did not come across any actual research in on digital transformation and performance of General Insurance Companies in Kenya done for the above Industry reports. There has been attempts by previous scholars on the area of general insurance companies' performance. Ndambo (2016) conducted a study to determine how big data analytics within firms impacts their competitive advantage of insurance companies and commercial banks operating in Nairobi, which did not really focus on digital performance. The closest study was Otiso (2021) who studied the effect of technology on the performance and outcome of Insurance Companies in Kenya. The closest studies focused on other factors affecting performance and not necessarily digital transformation in general insurance companies in Kenya performance. From the various attempted studies, there were knowledge gaps.

1.3 Objectives of the study

1.3.1 General Objective

The general objective of the study was to investigate digital transformation and the performance of General Insurance Industry in Kenya with focus to CIC General Insurance Company Limited.

1.3.2 Specific objectives

The research specific objectives were to examine;

- i. How big data analytics affects General Insurance Company performance
- ii. How internet of things affects General Insurance Company Performance
- iii. The impact of process automation on General Insurance Company performance
- iv. How artificial intelligence affects General Insurance Company performance

1.4 Research Questions

The following questions guided this study

- i. How do big data analytics affect performance CIC General Insurance Company?
- ii. In what ways does internet of things affect performance CIC General Insurance Company?
- iii. To what extent does process automation affect performance of CIC General Insurance Company?
- iv. How does artificial intelligence affect performance of CIC General Insurance Company?

1.5 Significance of the Study

This study gives more information towards understanding the status of DT and as well aid policy makers in the insurance firms on areas to consider for effective DT in improving the various aspects of their performance. The study was important in validating previous research done in other markets and its similarities or differences in relation to the local insurance industry.

The research can guide the regulator and insurance bodies towards coming up with policies and guidelines towards accelerating DT within the insurance industry.

1.6 Scope of the Study

The purpose of the study was to understand and understand digital transformation and performance of the insurance industry in Kenya. Four variables were used in the study, which included big data analytics, the internet of things, process automation, and artificial intelligence. The study focused on CIC General Insurance Company operating in Kenya. The

company has its operations across the country and its head offices at CIC Plaza, Upperhill, Nairobi. The study was conducted between January 2022 and October 2022.

1.7 Chapter Summary

This chapter addresses the study's background. This chapter is divided into information on the study's background, problem statement, study objectives, research questions, the significance of the study, and the scope of the study.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This topic addresses past research regarding the practices of digital transformation and the performance of organizations. This entails a theoretical literature review and an empirical literature review. Lastly, this chapter presents the conceptual framework that will explain the relationship that exists between the independent variables and the dependent variables.

2.1 Theoretical Literature Review

The formulation of different theories is attained for purposes of explaining, predicting, or understanding phenomena and, in most cases, challenging and extending the current knowledge within the confines of serious assumptions. A theoretical context is a structure that supports or holds a research theory (Teece, 2014). A theoretical context introduces and defines a theory, which enlightens the reason for the existence of a problem under research. Several theories will be used when undertaking this research. They entail the Diffusion of Innovation Theory, Dynamic Capability, and Resource-Based Theory. The Resource-Based Theory will be the anchor theory of this study being carried out.

2.1.1 Resource Based Theory

This was the anchor theory for this study. Barney, in 1991, wrote an article titled Firm Resources and Sustained Competitive Advantage, which has been extensively cited as a fundamental work in the development of the resource-based view. In response to superior performance, there is causal support within the Resource-Based View (RBV), later raised to the position of Resource-Based-Theory. This theory is a good basic model that describes how the way a company handles its important resources can explain how well it does. This knowledge should guide the strategic thinking of managers and explain why some companies can grow their markets, strengthen their brand, make more money, and stay ahead of the competition over time, while others in the same industry can't do the same. Resources and capabilities are the primary constituents of the Resource Based Theory, which is based on the VRIO framework. In this framework, the performance of the firm will depend on its valuable resources, which are rare, hard to copy, and well-organized (Wamba et al., 2017).

According to Penrose (1959), competitive advantage can arise from organizational resources and or capabilities that trigger and determine a firm's capability for innovation. A firm is considered as a synchronized bundle of resources and its aptitude to exploit the resources can be a foundation of sustainable competitive advantage (Teece et al., 1997). Firms attain competitive advantage from distinctive bundles of physical and intangible assets that are rare, imitable, valuable, and sustainable. Firm resources are assets that a company keeps for a long time. They include human, social, physical, technological, knowledge, and financial resources.

A firm's own resources provide a much more stable environment in which to develop innovative activity and outline its market (Ellul & Yerramilli, 2010). Once a firm has resources that are valuable or rare and not easily copied by competitors, it can achieve a sustainable competitive advantage, typically in the form of innovative new products or services (Trott, 2008). The existence of varied organizational resources and capabilities has a positive effect on the innovation operations and capabilities of firms. Organizational resources provide the contributions that are collective and transformed by capabilities to produce innovation. Among the most significant bundles or resources for a firm are its financial resources, which can be used to expand the firm's capacity to support innovative activities, especially research and development. Lack of financial resources may be a barrier to innovation and hence digital transformation. According to Yang et al. (2011), internal financial resources are more conducive to facilitating R&D activities as compared to external funds.

Knowledge-based resources are another key resource for firm competitiveness (Wang *et al.*, 2009). The knowledge within a firm facilitates the discovery of new ideas and helps take advantage of opportunities for innovation. This can be used to manipulate, develop, and transform the other resources to enhance the competitiveness of the firm in the market (Gilbert *et al.*, 2008). Knowledge resources enable firms to accurately envisage the nature and potential of changes in the environment or the relevance of strategic activities. Knowledge provides the groundwork for the buildup and development of even the utilization of other resources by the firm (Price *et al.*, 2013). These resources would include knowledge generated by the firm from within and that learned by the firm from other sources of knowledge. A pool of competent employees possessing advanced knowledge and skills intensifies the innovation know-how of a firm (Vijayakumar & Tamizhselvan, 2010). The resource-based theory

focuses on the link between a company's resources and its ability to come up with new ideas and how those resources affect the company's ability to change in order to make the most of its resources (Malik, 2011).

The theory was relevant to this study and was considered the anchor theory since it links the performance of firms to the possession of resources under the various aspects of digital transformation; big data analytics, IoT, process automation, and artificial intelligence, as rare resources to influence firm performance. It is the utilization and alignment of these resources, which are not easily imitated by other firms, that have the potential to enable firms to perform better than other firms. Digital transformation strategies that are unique and hard for other companies to copy can give them a competitive edge.

2.1.2 Diffusion of Innovations Theory

The diffusion of innovation theory was developed by E.M. Rogers in 1962. The theory seeks to clarify how, why, and in what proportion new ideas or technologies spread. Rogers identified several characteristics of innovation that have a significant impact on adoption behavior. As per Rogers, these attributes are relative advantage, complexity, compatibility, trialability, and observability.

Innovation, communication channels, time, and social systems are the four key components of the diffusion of innovation theory. Demir (2006) explains that it is about learning the technology and developing an optimistic attitude towards it to gain its efficiencies and reduce costs. The decision to accept or reject it is highly dependent on the nature of the attitude an individual develops towards it. The process between acceptance of a technology, innovation, or new idea and its adoption starts with knowledge. Furthermore, organizations that reject innovation do not perform well in the market because they may experience low demand for their products or services. Failure to adopt innovation threatens the firm's survival since competing firms may outdo them.

This theory was relevant to this study in that the firms have different rates of technology adoption, which eventually have an impact on their performance. The stage of adoption can have an effect on a person's financial or non-financial performance. This was measured in the different dimensions of digital transformation.

2.1.3 Dynamic Capability Based View

This theory was established by Teece et al. (1997). The theory explains how companies can do well and stay competitive by using internal processes that can change and adapt to an environment that is always different and unpredictable. This theory's emergence was as a consequence of limitations of the action-based and resource-based theories on handling dynamic economies. The paradigm of dynamic capacity is open to knowledge and learning, entrepreneurship, innovation, and the management of change. The capacity of a company to change with market changes through innovation is essential for a firm's competitiveness. The driving force behind capitalism is the creation of new goods, new markets, new production methods, and new ways for businesses to work together (Teece, 2014).

The dynamic capability perspective explains how firms build and tolerate competitive advantages (Schilke 2014). Dynamic Capability extends the resource-based view of the firm (RBV) and focuses on the ability for firms to purposefully change their resource base to increase their degree of fitness with their environment. This would ensure their survival (Jiang et al. 2015; Schilke 2014). Dynamic capability implies that firms have within both ordinary as well as dynamic capabilities. Dynamic capability is the performance of administrative, operational, and governance functions that are technically necessary to complete tasks (Teece, 2014).

Dynamic capabilities enable firms to innovate and adapt to alterations in their environment through three core mechanisms: sensing, such as in the identification, development, co-development, and assessment of technological related opportunities in connection to customer needs. Seizing means putting resources to work to meet needs and take advantage of opportunities, and transforming means that the firm keeps getting better as its resources are reorganized to take advantage of opportunities and deal with threats (Teece, 2007).

The nature of digital transformation is a source of constant change and disruption in firms' competitive environment. The ability of firms to design mechanisms that enable repeatable and continuous adaptation in spite of such speedy changes is therefore an important question. Dynamic capabilities have been found to be most helpful in situations where there are many changes in the environment or where there is a lot of competition. This is because ordinary capabilities may not be enough to explain how firms build and keep competitive advantages (Teece, 2014).

As physical resources, which include products, may become comparatively less important than services as consumers contribute to influencing movements related to the usage of digital technologies and as networks become broader and more complex, firms are experiencing higher levels of uncertainty. To manage this level of uncertainty, mechanisms to sense and adjust to changes that originate outside of the firm's competitive environment and locus of control need to be put in place. Although there is some evidence of firms managing to adjust to these changes, our understanding of the capability of firms in designing repeatable mechanisms for this resolve is limited (Yeow et al. 2017). Recent developments in DT literature have recommended the concept of digital maturity (Kane, 2017) as the capacity to respond to change in a suitable manner, and we argue that dynamic capability may help us understand how firms achieve digital maturity. Companies design and keep up the higher-level mechanisms that make it possible for them to adapt as waves of digital innovation come and go.

The theory was relevant to the study in that DT requires the deployment of resources, the absence or presence of which has an impact on the organization's performance. Firms may face difficulties in acquiring or fully utilizing new or even existing technology. The Internet of things, big data analytics, automation of processes, and artificial intelligence have to consider the dynamic environment in which the firm is operating. There is emphasis on the firm's capability in renewing competence, integration of resources, and reconfiguring them to create and match market changes through DT. The theory sheds light on the research about how essential it is for a company to have dynamic capabilities, which are important for being competitive in a changing, unstable environment.

2.2 Empirical Literature Review

Empirical research develops conclusions grounded on experience, which can be directly envisaged or indirectly observed with support of experiments. Ordinarily, the analysis is performed by quantifying the outcomes and inference is drawn (Christensen & Preona, 2015). Several studies have been carried out in the study's areas of interest from global, regional to local perspective. This section presents the relevant studies which have been done.

2.2.1 Big Data Analytics and Organizational Performance

Ferraris et al. (2019) conducted a study on the effect of big data analytics capabilities on firm performance in Italy. The objective of the study was to determine whether data can be analyzed and categorized into useful information for businesses, as well as transformed into big data-related knowledge and effective decision-making processes, thereby enhancing the performance of the firm. This was an empirical investigation based on structural equation modeling and 88 Italian SME data. The study determined that BDA capabilities have a positive impact on the performance of businesses. It was discovered that companies with greater managerial and technological BDA capabilities improved their performance. BDA has the potential to improve the competitiveness of businesses through a superior understanding of market trends, the processing and exploitation of vast amounts of data originating from various internal and external sources, and their processes.

Ndambo (2016) conducted a study to determine how big data analytics within firms impacts their competitive advantage of insurance companies and commercial banks operating in Nairobi. The study aimed, among other things, to determine the extent of big data analytics application in insurance companies and commercial banks in Nairobi, as well as the relationship between big data analytics and competitive advantage, and to identify the challenges of big data analytics. The descriptive survey was used to collect data for this study. In Nairobi, there were 49 insurance companies and 42 commercial banks. Twenty-five insurance companies and twenty commercial banks were sampled. The selection of the sample was based on the use of big data analytics by the companies, and structured questionnaires were used to collect primary data. The majority of respondents were company strategy managers or ICT managers from the selected companies. Frequencies, means, percentages, regression methods, and standard deviation were used in analyzing the collected data. The study discovered that companies in the financial industry, particularly insurance companies and commercial banks, have made substantial investments in data storage facilities and advanced analytical tools for reporting consumer and client behavior. In addition to optimizing their operations, these tools enabled businesses to anticipate consumer needs more accurately. The incorporation of big data analytics into the company's daily operations enables them to gain deeper insights into big data environments, thereby facilitating more effective decision making. The research identified some challenges in the management of big data that, if addressed, could assist organizations in realizing the full potential of big data

tools and the numerous analytic techniques, particularly in terms of competitive advantage. The conclusion of the study was that the era of big data analytics is positively reshaping the performance of the commercial banking and insurance industries in Nairobi. Big data analytics is on the rise as banks and insurance companies in Kenya continue to recognize the immense potential of the valuable data they have had access to for years (Ndambo, 2016).

Mugane (2018) conducted a study within the Fintech firms and commercial banks operating in Kenya to determine the relationship between big data analytics and their competitive advantage. The study's objectives included determining the degree to which banks and fintech companies in Kenya have adopted big data analytics and determining the relationship between BDA adoption and competitive advantage. Utilizing a descriptive research design, the investigation was conducted. A population survey was conducted among Kenya's 38 fintech firms and 42 commercial banks. A structured questionnaire was used to collect data. Using descriptive statistics and regression analysis, the data was analyzed. Multiple regressions were conducted to determine the strength of the association between BDA adoption and competitive advantage. The study revealed that 11.5% of organizations had not taken any steps toward BDA adoption, while 23.1% were effectively utilizing the technology. The remaining organizations were either testing their data models or preparing for adoption. According to the study, the adoption of big data analytics has a substantial effect on competitive advantage. Organizations that utilized BDA effectively were able to develop new products, enter new markets, and improve distribution methods. The study found that organizations faced a variety of obstacles when adopting BDA. Integration of legacy operating systems with new technologies as well as poor data quality were among the obstacles. The study suggested that adopting BDA provided the organization with numerous opportunities that could be exploited. These opportunities included enhanced customer service, streamlined operations, and accelerated decision-making.

Omwono (2018) examined the impact of cloud data hosting on the organizational performance of insurance companies in Kenya. Among the aims was the determination of the relationship between the magnitude of cloud data hosting and the organizational performance of Kenyan insurance companies. The study used descriptive research to examine all insurance companies in Kenya. The respondents were ICT personnel from the companies. A structured questionnaire was used to collect the data. Using descriptive statistics and regression analysis, the data were analyzed. The study found that insurance companies had adopted big data

analytics to a significant degree. It was also recognized that both the third-party provider and the insurance company managed the hosted cloud solutions. In addition, the study discovered that cloud data hosting is crucial for insurance companies. The study determined that the firms' competitive advantage was enhanced by cloud data hosting. The study determined that big data analytics is primarily hosted in the cloud, followed by data recovery, and that big data analytics is significant in determining organizational performance among Kenyan insurance companies. In conclusion, the study suggested that cloud hosting solution providers provide effective case scenarios and statistics to assist businesses in understanding the potential benefits of big data analytics.

Kasoa (2020) conducted a study to determine how smart big data analytics affects the organizational performance of Safaricom Limited. In this study, a descriptive design was adopted. The study included 2,970 employees of Safaricom Limited. The study specifically targeted customer service department employees. The results demonstrated that both innovations and customer experience had a positive effect on the performance of the organization. Moreover, results demonstrated that big data analytics positively affected organization performance. The study also revealed that Safaricom's ability to provide service as promised, its commitment to delivering a service correctly the first time, its dependability in attending to customer issues, its capacity to maintain error-free records, its adaptability in adjusting its methods of operation and willingness to listen to customers without ignoring their complaints, its provision of regular and honest feedback, and its ability to provide timely feedback were all positively correlated with customer satisfaction. The conclusion of the study was that Safaricom's ability to conduct feedback analysis, identify trends and patterns that point to underlying problems, manage network congestion, and analyze internal data to improve the network led to an increase in profitability. Additionally, big data analytics improved organization performance. The study recommended that Safaricom Limited innovate new products and services with greater vigor, as this would enhance the company's performance and competitive advantage. Safaricom should be committed to continuously enhancing their existing products and maintaining consistency in their response to customer complaints. Additionally, Safaricom should adopt new technologies that would facilitate the delivery of customer service. This could be accomplished through the use of emerging technologies, such as machine learning and artificial intelligence to predict the needs of the customer.

Kagechu (2018) conducted a study to determine the impact of big data on the organizational performance of Kenya's listed commercial banks. Among the objectives was to determine the impact of big data on the performance of Kenyan commercial banks that are publicly traded. The population of the study consisted of all managers and individuals at managerial levels, especially in the information technology, operations, finance, customer service, and marketing departments. 191 managers comprised the total population of the study. The sample size was 129, and 92 participants completed the research. Big data had a positive impact on the performance of listed commercial banks in Kenya, according to the study. Big data has improved customer service and reduced marketing expenses by maximizing resource utilization and empowering individuals to make better decisions. The study recommended that commercial banks in Kenya optimize their use of big data analytics to improve resource management and lower operational expenses. Further, the study suggested that in order for listed commercial banks in Kenya to maximize the benefits of big data analytics technologies, they should invest in the appropriate big data analytics tools and equip their staff to do the same.

2.2.2 Internet of Things and Organisational Performance

Mutuku and Muathe (2020) conducted a study on the impact of the Internet of Things on performance in Kenya. The objectives of the study were to determine the impact of the Internet of Things on the sales and marketing strategies of businesses, the impact of the Internet of Things on resource administration in contemporary businesses, and the impact of the Internet of Things on business success. Exploratory research was used to investigate the impact of IoT data on business performance. Recently published papers on IoT and its impact on business performance, including sales and marketing strategies, were subjected to a literature review. The profitability level was categorized. Utilizing research papers, websites, journals, and books, the essential subject matter was compiled. The study's analysis revealed that the IoT has enormous potential for businesses in a variety of industries. The data gathered through the application of IoT revealed business opportunities for increasing efficiency, which would boost sales and marketing, resource management, the company's growth potential, and consequently its profitability. The study indicated that despite the difficulties in the development of IoT technologies, their implementation in businesses seeking to improve performance is inevitable (Mutuku & Muathe, 2020).

Moreira (2019) conducted a study in Sweden to determine the impact of the internet of things on reputable business models, as well as the challenges that its application presents and how these should be addressed. Earlier literature on IoT focused primarily on its technical or technological aspects or its application in the manufacturing sector. The main purpose of the study was to determine how the Internet of Things would influence the business models of insurance companies. In order to answer the research questions, a multiple case design was chosen, and semi-structured interviews were conducted with four distinct insurance companies, each of which was implementing unique insurance-centric IoT solutions. Eight interviews were conducted in total. One of the interviews was with an IoT-provider to gain an additional external perspective. The business model canvas framework was used to analyze the impact of various IoT applications on the business model's constituent blocks. The study was founded on the business model innovation theory in order to examine the obstacles associated with IoT adoption and their potential solutions.

The outcomes suggested that the IoT has the biggest influence on the value proposition, where clients will experience enhanced insurance coverage. The Internet of Things has a substantial and positive impact on the financial aspects of an organization by reducing the risk of loss. Insurers will be expected to offer discounts on premiums to encourage customers to reduce their risk. In addition, insurers anticipated a reduction in the frequency and severity of claims, which accounted for approximately 69% of revenues. In the customer interface of the business model canvas, it was determined that IoT could enhance the personalization and frequency of customer interactions. IoT advised policyholders on how to reduce their risk of loss and take the best possible care of their insured property. For distribution, communication, and marketing channels to have a positive impact on the business, partnerships were suggested by the study. According to the study, insurers will have to rely on external IoT solution providers and other key business partners for a significant portion of the work associated with developing and implementing digital methods. With key partnerships, insurers' key resource allocations and business operations will not be negatively impacted by changes. (Moreira, 2019).

2.2.3 Process Automation and Organisational Performance

When insurance becomes a commodity, there is an opportunity to automate processes to streamline the entire customer journey, from purchasing a product to filing a claim. Using technologies such as machine learning, telematics, artificial intelligence, and telematics,

insurers can gain a better understanding of what the data means, allowing them to make decisions quickly and effectively. Artificial intelligence enables machines to think and reason like humans (Pareek et al., 2020).

Insurers routinely handle an atypically high volume of business developments, such as underwriting and claims processing, in addition to providing policy quotes manually, which causes unnecessary delays and negatively impacts business conversion, customer satisfaction, and profitability. Robotic process automation employs intelligent virtual workforces (or bots) that interact with software applications such as ERP systems, databases, and service desks. The conducted research revealed that the application of ICT in the insurance industry enhances risk analysis capability, business capacity, and business area, as well as the efficiency of services. In addition, digitization enables businesses to alter their business practices in order to provide better insurance services and facilitate communication between customers and the insurance industry. This is due to the fact that digitization encourages customers to acquire insurance services via secure delivery methods without interacting with insurance brokers directly (Salatin et al., 2019).

The insurance industry is being transformed by digitalization and the transition from manual and physical delivery of insurance services to automation. The use of mobile devices, Big Data, chat-bots, the Internet of Things (IoT), Artificial Intelligence (AI), and robots has had a significant impact on the insurance industry's service delivery process. This includes creating new products, assessing risks, determining premium prices, advertising and selling, handling claims, communicating with customers, and running the business (IAIS, 2018).

Kemboi (2018) conducted a second study on the impact of automation on the performance of Kenyan commercial banks, focusing on the National Bank of Kenya. The study began by identifying the automated systems utilized by commercial banks. The study then evaluated the strategic orientation of organizations toward automation and concluded by determining the impact of automation on organization performance. In this study, a descriptive research design was utilized. 98 National Bank employees at the headquarters were given structured questionnaires to collect data. As new technologies emerged on the market, the bank was continuously automating its systems, as demonstrated by the findings. The bank customers accessed and utilized these automated systems to conduct personal transactions. The research demonstrated that the bank's strategic plans were aligned with automation. The study found

that as a result of banks adopting automated systems, customer service levels and customer relationships improved, resulting in enhanced performance. System automation has expanded the opportunities available to customers and given the bank a better competitive edge in the industry, which has increased customer satisfaction, customer loyalty, and revenue due to lower marginal costs, thereby expanding profit margins. The study recommended that the bank automate its systems continuously as new technologies emerge. In addition, that study recommended that the bank should invest in technology, as this was deemed crucial to aligning business strategy with information systems (Kemboi, 2018).

Otiso (2021) conducted a study in Kenya to determine the impact of technology on the performance of all Kenyan insurance companies. The population of the study consisted of all 54 insurance companies in Kenya as of December 31, 2019. Each company's marketing manager or an equivalent manager was given a questionnaire. According to the study, the application of technology improved performance. Document management systems are the most prevalent technological practice. The conclusion of the study was that increasing the use of technology improves performance. The study recommended that additional research be conducted on the impact of technology on performance in other industries.

Ngiri (2021) conducted a study to determine the impact of technology adoption on underwriting procedures at the five largest insurance companies in Nairobi County. The research design was a descriptive survey. The targeted population includes 1,174 employees of the top five insurance companies in Nairobi County. Utilizing structured questionnaires, data collection was conducted. The majority of insurers agreed, according to the study's findings, that automation ensures that the insured provided accurate information that can be verified during the investigation. Insurers' underwriting procedures were positively and significantly affected by digital claim processing, according to the findings. The research found that customer relationship management systems had a positive impact on insurers' processes. The study determined that digital fraud detection, digitization of the claims process, and customer relationship management system factors had a significant impact on underwriting. Digital claim processing, digital fraud detection, and customer relationship management system characteristics had a positive impact on underwriting performance. The research suggests that insurers automate their claims and underwriting procedures. Additionally, insurers should implement digital control mechanisms.

2.2.4 Artificial Intelligence and Organisational Performance

Kreutzer and Sirrenberg (2020) argued that machine learning and deep learning are interdependent application fields that form the foundation of artificial intelligence practice. The two researchers identified natural image processing, also known as computer vision, natural language processing, robotics and expert systems, as the four major application fields within the field of artificial intelligence. They also stated that innovations such as self-driving cars are a hybrid form of artificial intelligence application.

Eling et al. (2021) conducted a study to determine the influence of artificial intelligence on the insurance value chain and insurability risk. The study was based on a database containing the findings of 91 papers and 22 industry studies. Utilizing Porter's (1985) value chain and Berliner's (1982) insurability criteria, the research explored the impact of artificial intelligence on the insurance industry. The purpose of this paper was to assist industry practitioners in understanding the potential benefits of artificial intelligence applications and to encourage academics to conduct more research on this multidimensional, controversial, and severely understudied topic. The study showed that artificial intelligence has the potential to revolutionize many undertakings across the insurance value chain process.

The primary opportunity for value creation revolves around automating processes, which can result in cost savings and increased margins; the use of customer insights to enable a company to enter new revenue streams; the acquisition of new customers; and more customer-centric interactions, which result in increased revenue. In addition, the study determined that the use of artificial intelligence in insurance markets is in its infancy, and that academic research on the effects of artificial intelligence on insurance business models is still limited. As evidenced by the rapid expansion of the InsurTech industry, artificial intelligence is garnering an increasing amount of attention and interest from practitioners around the world. The study would encourage academics to pave the way for the successful adoption of artificial intelligence and aid practitioners in directing their organizations to reap the many benefits of using artificial intelligence.

Since the insurance business model will shift from loss or claims reimbursement to loss and claims prediction and mitigation, the adoption of AI is expected to result in both cost savings and new revenue streams, according to the study. In addition, they identified two potential developments in terms of risk insurability. The first is that the application of artificial

intelligence within the insurance companies may allow for a more accurate and precise prediction of loss possibilities, thereby significantly reducing one of the industry's most significant inherent problems, which is typically caused by asymmetric information. The second development is that artificial intelligence would significantly alter the risk landscape by transforming certain low-severity and high-frequency risks into models with high-severity and low-frequency. This would necessitate that insurance companies rethink their traditional insurance coverage and, consequently, design suitable insurance products and services (Eling et al., 2021).

Cheruiyot (2018) sought to determine the degree of AI adoption and the impact of AI on the performance of a sample of service firms in Nairobi, Kenya, in his study. Using a descriptive research design, the study targeted 30 firms that have adopted AI. Due to the early stages of AI in Kenya, subjective sampling was utilized, resulting in a high response rate. The study discovered that AI techniques are only partially structured, indicating that they are already associated with technologies whose full potential has not yet been explored. Moreover, AI processes have a positive impact on the operational performance of service organizations. The study commends reskilling to bridge the skills and knowledge gap between AI and data science; emerging policies that moderately encourage rather than discourage AI technology transfer; and the improvement of a structure for open data standards for private and public sector data.

Butner and Ho (2019) pointed that the primary goal of intelligent automation is to augment employees' skills, knowledge, and the human mind in a variety of ways that enable increased productivity, inventive problem-solving, and the creation of engaging jobs for employees. On the basis of AI concepts, a study was conducted to gain and have a better understanding of the usage of artificial intelligence (AI) in the insurance industry, and a conceptual model was created. The proposed conceptual model measures the relationship between AI and its insurance industry use cases. A quantitative empirical study was utilized to validate the model, with a sample of international firms and InsurTechs employing such models. When responding to dissatisfied customers and other processing issues, insurance companies were deemed to benefit greatly from the insights gleaned from the research. The research demonstrates that AI can aid in the development of methods for improved customer approval, effective time management, increased profits, and the reduction of fraud and operational complexities.

Alli et al. (2021) conducted research aimed at determining how knowledgeable the Nigerian insurance industry is, their perception and attitude towards artificial intelligence, and whether the application of artificial intelligence will significantly improve insurance claims provision, customer service delivery, insurance underwriting and marketing of insurance services within the industry. From a previous study, a modified structured questionnaire was used to collect information from respondents. The study's population consisted of all insurance companies within the Nigerian insurance industry. For the study, 60 employees were purposefully selected from each of the 60 insurance companies. The collected data were presented using inferential and descriptive statistics, and chi-square was used to test the hypothesis. The study also revealed that the Nigerian insurance industry's insurance companies are well-informed on the topic of artificial intelligence. They have a favorable view of artificial intelligence and view it as an innovation that will improve the core operations of insurance companies. The study concluded that the application of artificial intelligence significantly enhances the underwriting, marketing, claims, and service delivery of insurance companies in the Nigerian insurance industry.

2.2.5 Organizational Performance

Magu (2019) conducted a study in Kenya to determine the effectiveness and application of the Balanced Scorecard as the performance measurement tool for insurance companies in Kenya. The design of the study was a cross-sectional analysis of the insurance industry in Kenya. Kenya contained fifty insurance companies. According to the findings of the study, the BSC is a comprehensive and accurate performance measurement tool. The customer perspective metric of the balanced scorecard accurately measured customer satisfaction, whereas the business process metric accurately measured the performance of internal processes. The study also revealed that the innovation and learning section of the balanced scorecard was an effective method for determining a company's adaptability to its environment. The study determined that the financial performance indicator of the balanced scorecard adequately measures the achievement of operations in meeting financial goals. The study discovered that the balanced scorecard is a common and valuable performance measurement tool. The study lauded the adoption of BSC by insurance companies seeking to evaluate their performance.

Sahu (2019) did a study in Australia to determine the most essential aspects of digital transformation for enhancing customer experience in Australian businesses. According to the

study, digital transformation provides organizations with analytical tools that enable them to better comprehend customer behavior, customer engagement, and market trends, thereby enhancing the customer experience. Optimized processes, increased customer collaboration, enhanced customer engagement, and improved customer service are all indicators of DT's proficiency.

In their study Kumar et al. (2021) on a study on digital transformation of financial institutions and their profitability in Korea, concluded that banks' incorporation of utility services as a result of going digital has supplemented other new revenue streams. The banks were able to capitalize on the massive amounts of consumer behavior data gathered through digital touchpoints. In addition, by analyzing the collected data, one can gain greater insights that are useful for future business decisions and may lead to profitability and resiliency. Do et al. (2022) in their study on the impact of digital transformation on the Vietnamese commercial banks performance, it was discovered that DT has a positive impact on the performance of the banks. Further, the effect of digital transformation on the performance of banks was established to be greater for larger institutions.

Zhai et al. (2022) conducted a study to determine if digital transformation improves a company's performance. Using a sample of Chinese insurance companies, this study evaluated the impact of DT on performance. Utilizing recent advancements in textual analysis and manual reading of annual financial reports, we quantified whether a company has DT and to what extent it has DT. The results demonstrated that DT improves a company's performance. The study found that when a company implements DT, its costs decrease, its operating efficiency increases, and its success with new ideas increases, which can lead to enhanced performance.

Cheruto and Kyalo (2021) conducted a study on the transaction efficiency and performance of digital businesses in Nairobi County, Kenya. The study followed a descriptive research design. Transaction effectiveness has a significant impact on performance, as indicated by the findings. In addition, it allows for real-time direct payment upon business completion, thereby enhancing the performance of businesses. The study recommends that digital companies provide their employees with regular training on emerging trends on digital platforms. This will increase the business's profitability, online sales, and customer base.

Eckert et al. (2022) conducted a study on customer satisfaction management in insurance companies where digital applications can be utilized. They concluded that the importance of

customer satisfaction management within the insurance industry is growing. Specifically, they must define a customer-focused strategy and implement digital applications based on technologies such as cloud computing and artificial intelligence, which are among the most significant strategic challenges. Digital transformation has the potential to make customers happier, which has a greater impact on insurers at the four main points where they interact with customers: contract changes, contract conclusion in the event of loss or damage, and additional contact. These outcomes are strategic steps to support the position in sales and marketing, to streamline standard processes, to increase customer efficiency and interaction, and to support the position in sales and marketing. This enhances the organization's effectiveness.

Goswami and Upadhyay (2019) conducted an empirical investigation into digital transformation and its impact on employee engagement. The purpose of the study was to establish how employees felt about digital transformation and how that affected the level of their engagement with the organization. Based on the study's findings, there was a strong possibility that employees would be more engaged in a digitalized environment than in a manual one. Clearly, digital technology had resulted in increased operational transformation. The impact of digital transformation on operational efficiency and business modeling on employee perception of the organization was substantial.

2.3 Summary of Knowledge Gaps

Table 1: Summary of knowledge Gaps

Author	Area of the study	Methodology	Findings	Knowledge Gaps	Focus of the current Study
Sahu (2019)	Investigating the Critical Success Factors for Digital Transformation to enable Customer Experience in Australian Organizations.	Descriptive survey	There is a positive impact on Customer experience after digital transformation especially Process Automation	The aspect of Customer experience may not be conclusive for the firm performance. Conceptual Gap	The study will include more performance measure not just customer service.
Cheruiyot (2018)	Artificial Intelligence and the Operational Performance of Nominated Service	Descriptive survey	Artificial Intelligence have a positive impact on the operational	The research was done for service organizations and not	The study will focus on Insurance companies in Kenya. Further it

	Organizations in Nairobi, Kenya		performance of service firms	specifically to Insurance. Contextual Gap	will include other aspects of DT.
Otiso (2021)	The Effect of technology on the performance and outcome of Insurance Companies in Kenya	Descriptive survey	Enhancing the usage of technology has a positive impact on its performance	Research was done for one aspect of Digital Transformation, Technology. Conceptual Gap.	The proposed study will the whole spectrum of DT which is more than Technology.
Kagechu (2018)	Impact of Big Data on Organizational Performance: A case study of Listed Commercial Banks in Kenya	Descriptive survey	Big data Analytics had a significant and positive impact on Organizational Performance in listed commercial banks in Kenya	Research was done on Listed Banks in Kenya. Contextual Gap. It as well focused on Listed Banks.	Current study will focus on Insurance whose behavior may slightly differ to the one for the Banks.
Ngiri (2021)	The effect of Technology adoption on the Underwriting Processes amongst the top five Insurance Companies operating in Nairobi County	Descriptive survey	There is was positive correlation between adoption of technology (Process Automation) and insurance company performance.	The study focused on the Internal Business Processing aspect of the BSC and not the wider spectrum of performance. Conceptual Gap	Underwriting is one function in an Insurance company. Current study will widen the scope to include more functions in an insurance company.
Ling et al., (2021)	The impact of artificial intelligence along the insurance services value chain and on the insurability of risks	Descriptive Survey	artificial intelligence applications by insurers can push the extent of insurability as several low-and high-severity risks become insurable	The study focused on the insurance value chain and not on Performance of the company. The study was done by use of already published studies.	The current study will use structured questionnaire to obtain data

				Conceptual Gap	
Kasoa (2020)	Effect of Smart Data Analytics on Organizational Performance of the Telecommunications Industry: A case study of Safaricom Ltd	Descriptive survey	Business Analytics influenced organization performance positively	The study focused on one variable of Digital Transformation and was based on a Telco. Conceptual and contextual gap	The telecommunications industry has different operations as compared to Insurance.
Mutuku and Muathe (2020)	Nexus Analysis: Internet of Things and Business Performance An exploratory research	Descriptive survey	Implementation of IoT can provide business with opportunities of improving their efficiency which has an overall effect on Performance	This exploratory study failed to look at other underlying aspect in relation to Internet of things. Conceptual Gap.	Study will concentrate on Kenya Insurance Industry and look at the various aspects of DT.
Eling and Ruo (2021)	Efficiency and profitability in the global insurance industry	Descriptive survey	There was positive and important relationship between profitability and efficiency	This was a global study based on global averages. We would like to establish whether this is the case in the Kenya market. Conceptual and contextual Gap	Study will focus on Kenya Insurance market. The global dynamics are be different from Local
Moreira (2019)	The effect of the internet of things on established business models: case study of Swedish insurance Companies.	Descriptive survey	It was concluded that the IoT had an impact on the business model	The study was conducted in Sweden and focused on IoT only. Conceptual Gap	Study will focus on a wide spectrum of DT. Study will be done in Kenya

2.4 Conceptual Framework

As per Bogdan and Biklen (2013), a conceptual framework is a basic structure that comprises definite abstract blocks that symbolize the observational, the experiential, as well as the analytical and as well as the synthetically aspects of a process or the system being conceived. The interconnection of these blocks basically completes the context for a certain expected outcome. The conceptual framework would represent the relationship between the independent variables and the dependent variable being studied.

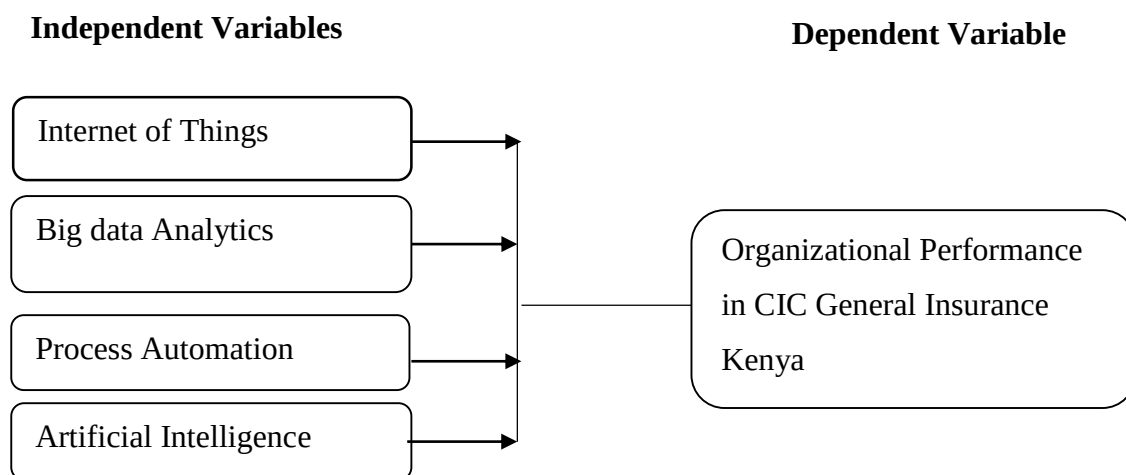


Figure 1: Conceptual Framework

2.5 Operationalization of Research Variables

The Operational Framework studies the manner in which the variables will be analyzed.

Table 2: Operationalization of Variables

Variables	Indicators	Scale	Measurement Tool of Analysis
Big data Analytics affects	Gathering and storage of data Turn Around Times Minimization of fraud Increased profitability Increased revenue	Ordinal	Likert Scale 5 - point rating
Internet of things	Enhanced service quality Better Risk assessment Reduced Claims cost management Improved customer experience Generation of extra revenue Enhanced employee skills	Ordinal	Likert Scale 5 - point rating
Process automation	Improved service delivery Reduction in operational costs Reduction of manual tasks Employee Job Satisfaction Tracking of claim settlement process Improve employee productivity	Ordinal	Likert Scale 5 - point rating
Artificial Intelligence	Decision making Better risk assessment Reduced claims cost Improved customer experience Increased profit	Ordinal	Likert Scale 5 - point rating
Organisation Performance	Sales/Revenue Profit Cost of production Turn Around Times (TAT) Customer satisfaction Increased Market share Employee knowledge and skills Employee satisfaction	Ordinal	Likert Scale 5 - point rating

2.6. Chapter Summary

The chapter considered the pertinent literature concerning the study objectives that the research determination presents. The literature was reviewed under five headings including; theories that guided this study and the independent variables that were used. The literature was discussed from regional, global and Kenyan cases.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

This chapter summarizes the approach that was used to collect data for this study. It basically entails research design, the population target, the size of the sample and the procedure of sampling, validity of these instruments used in the research, reliability of the study findings, and the procedures of collecting data and the techniques that were used to analyze the data.

3.1 Research Design

A research design is a framework for data collection and analysis to answer a study research question. Decisions regarding what, where, how much, by what means concerning an enquiry or research study constitutes a research design. (Blumberg et al., 2014). The research applied the descriptive design of research because it demonstrates the true situation of what the circumstances are (Blumberg et al., 2014). It is aimed at describing the features of particular phenomenon within a given case. Orodho (2009) states that this type of design is appropriate as it is applied in obtaining information that describes the phenomena existing through asking an individual about matters concerning their values, behaviors, attitudes, and perceptions. The appropriateness of this design is that it allowed the researcher to apply both quantitative and qualitative data so as to establish the influence of DT on the performance of insurance companies in Kenya (Blumberg et al., 2014). The design was also used because it gives the researcher the chance to collect data from a sample of the population using similar tools at the same time.

3.2 Target population

A population is defined as a complete set of elements, objects, or persons that have particular common characteristics as defined by the sampling criteria that have been established by the researcher (Blumberg et al., 2014). A population refers to the total collection of all subjects and, consequently, where a sample will be drawn (Zikmund & Griffin, 2012). The target population is a cluster of individual items or objects from which the sample is taken for a definite study (Kombo & Tromp, 2009). Blumberg et al. (2014) suggest that the term "population" refers to the whole group of people or objects that have common characteristics that have been imitated to a unique specification. For purposes of this study digital

transformation and performance of General insurance companies in Kenya, the researcher focused on CIC General Insurance. According to the CIC Annual Report (2020), the number of employees was 315, drawn from different departments as shown in Table 3.

Table 3: Study Population

	Management	Supervisory	Officers	Total
Underwriting	4	18	44	66
Claims	3	12	26	41
Finance, Admin, & HR	4	26	37	67
ICT Department	6	27	39	72
Marketing	6	22	41	69
Total	23	105	187	315

Source: CIC General Insurance Annual report 2020

3.3 Sampling Design

According to Trochim (2006) sampling is the selection of a ration of the population that typifies the said population. Sampling involves the selection of components from the population of interest, which forms the sample. Trochim (2006) defined a sample as a carefully chosen sub-group that has the same characteristics as the whole population. The sample size depends on what one wishes to know, the purpose of inquiry, what will be beneficial, what will have credibility, what would be at stake, and what can be completed with available resources and time (Oso & Onen, 2011). A sampling frame is a list of features from which the sample is essentially drawn (Blumberg et al., 2014). Some parts of the population are chosen at random so that conclusions can be drawn from them. Saunders et al. (2009) say that the best way to judge a sampling design is by how well it reflects the characteristics of the population it is meant to study. The size of the sample was grounded in the populace of the different departments.

This study was carried out using a sample of 65 participants from the company who represent 20% of the population. This was perfect for the research because it achieved the quality of study through employing the ideal methodology of sampling. The best representative sample is the one that ranges between 10% and 30% of the population (Mugenda, 2008). The study employed stratified random sampling. A sample is a method in which specific places, people,

or events are chosen to find out important information that cannot be found in any other way (Fogelman & Comber, 2002).

Table 4: Sample Size

Category	Total Population	Sample Size	Percentage (%)
Underwriting	66	12	19
Claims	47	10	15
Finance, Admin & HR	67	12	18
ICT Department	72	17	26
Marketing	69	14	22
TOTAL	315	65	100

Kothari (2011) suggested that the sample size should be neither too small nor too big but ideal, which achieves reliability, efficiency, flexibility, and is representative. A large sample size is dependable and exact but too costly in terms of resources, while a small sample size is undependable.

3.4 Data Collection Instruments

Data collection is the method of gathering and measuring data on variables of interest, in a recognized systematic manner that facilitates one to answer the stated research questions, test hypotheses, and evaluate outcomes. Nachmias and Nachmias (2014). The data was gathered from the target population using a questionnaire. A questionnaire is a data collection tool that requires each respondent to answer the same set of questions and in the same order. Nachmias and Nachmias (2014) define a questionnaire as an instrument for measuring which probes participants to give an answer to a number of questions that the researcher has set. The questionnaire entailed questions that were open-ended as well as closed-ended in respect to the variable being studied. The research employed primary data. Primary data involves the information that the researcher gets directly from the study field. The first section of the questionnaire entailed questions concerning the participant's bio-data, and the rest of the segments entailed questions regarding the study's objectives. The questionnaires were distributed physically to the sampled population. To make it easier to fill out and collect the questionnaires, respondents were given two weeks to fill them out.

3.4.1 Data Collection Procedure

The researcher obtained permission from the University to carry out the study. A license for the collection of data was sought from the National Commission for Science, Technology, and Innovation (NACOSTI). The researcher developed a budget for resources which was

adopted in the course of collecting data, including a research assistant. The materials were obtained prior to the actual exercise of collecting the data. The timing of the data collection was planned carefully. The researcher engaged research assistants to help in distributing the questionnaires to the participants targeted. The filled-in questionnaires were collected within two weeks.

3.5 Pilot Test

A pilot test is a study done before the actual data collection to check the reliability and validity of the tools that were used to collect the data. This was a pre-test done before data collection to ascertain the accuracy of the research instruments that were applied in obtaining the anticipated information. It is important to do a pilot test to find any mistakes that may have been made when making the questionnaire and to see how well the research tools will work in the field (Cooper & Schindler, 2014).

The reliability of the questionnaire was established by carrying out a pilot study on seven randomly selected respondents from the population who were excluded in the final survey. According to Kothari (2011), a ten-percent sample drawn from the targeted population is regarded as sufficient to validate a questionnaire. The seven were requested to report on any ambiguous or unclear questions, identify any deficiencies in the questions or lack of clarity in the instructions, and suggest any changes. The changes as suggested were done. Mugenda and Mugenda (2019) pointed out that to get rid of response bias in the final survey, the questionnaire was changed and questions were reworded.

3.6. Validity

According to Mugenda (2008), validity is the degree to which the outcomes obtained from an analysis of the data would actually represent the phenomenon under study. Further, a measuring instrument is binding if it measures what it ought to measure (Bryman, 2016). Therefore, validity is concerned with the relevance of research components. The study adopted construct validity. According to Drost (2011), there are four types of validity, which are: construct validity; internal validity; statistical conclusion validity and external validity.

Construct validity denotes how well the results obtained from the used measures fit the theories around which the test will be designed (Trochim, 2006). This means the extent to which the sample mirrors the entire population that it is expected to examine. Content validity

was applied in the study to measure the data's representativeness. Mugenda and Mugenda (2019) contend the usual process for validity of a measure includes the use of a professional or an expert within a particular field. Expert judgment enhances the validity of an instrument. Before the final questionnaires were sent out, opinions from the experts were sought about how representative and useful the questions were. Modifications of the questionnaire were made to improve the validity.

3.6.1 Reliability

Reliability in qualitative research depends on the excellence of recording, the process of detailing data, and the ability of the researcher in understanding it (Flick, 2018). Conducting training for the interviewers is one of the methods that can be used to increase the reliability of interviews (Bell & Bryman, 2018). Reliability is the degree to which a given measuring instrument produces similar results each time it is used. This refers to how measurements stay the same over time. The test-retest reliability method is used to measure this.

Cronbach's Alpha Coefficient method was used in the reliability testing. This technique was used in administering the questionnaires two times within the duration of two weeks, after which the scores for the two sets were correlated. Cronbach's Alpha Coefficient was used because it assesses the internal consistencies of the research instrument objects. The alpha coefficient varies in value from zero to one, and the closer Cronbach's alpha coefficient is towards 1, the greater the internal consistency of the items in the scale (Zikmund et al., 2013).

3.7 Data Analysis

Zikmund (2012) stated that data analysis is the application of perception to understand the data that has been collected with the purpose of establishing reliable patterns and summarizing the any significant details that has been revealed in the investigation. Data processing is the process of editing, sorting, and tabulating data so that it can be analyzed. Data entry is the process of putting information found through primary and secondary sources on a medium that can be changed and looked at (Kothari, 2011).

This study gathered quantitative and qualitative data, which was organized systematically in an appropriate way with the aim of enhancing analysis. The qualitative data was analyzed through content analysis. After quantitative data was obtained through questionnaires, it was systematized for analysis by editing, handling blank responses, sorting, and eventually coding

and entering response into SPSS for analysis. The tabulated data was analyzed quantitatively using various percentages. Presentation of data was done in the form of pie charts, tables and bar graphs. Multiple regression analysis was used to figure out how the variables used in the study were related to each other. The regression model used to test regression in this study is shown below;

$$Y = P_0 + P_1 X_1 + e$$

$$Y = P_0 + P_2 X_2 + e$$

$$Y = P_0 + P_3 X_3 + e$$

$$Y = P_0 + P_4 X_4 + e$$

$$y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + e$$

In which Y= Performance indicators of General Insurance Companies in Kenya (dependent variable).

In which:

P₀ = Constant that describes performance without including independent variables

P_{1,2,3,4} = Coefficient of X₁, X₂, X₃ and X₄

X_{1-K} = Independent variables are,

X₁ = Big Data Analytics

X₂ = Internet of Things

X₃ = Process Automation

X₄ = Artificial Intelligence

e = Error Term

P_{1-K} = Regression coefficients describe how much Y is changed for a change in one unit of independent variables. The linear regression analysis method was applied. A correlation analysis was conducted to establish the relationship existing between the independent and dependent variables.

3.8 Ethical Considerations

3.8.1 Informed Consent

The researcher secured the authority letter from the Management University of Africa, and use a copy to secure the National Commission for Science, Technology and Innovation (NACOSTI) research authority letter and permit. The Management at CIC were consulted before any questionnaire was administered to the respondents.

3.8.2 Voluntary Participation

In order for the researcher to achieve the objectives of the study, no respondent was pressured to take part in the research; participation was voluntary through informed consensus of potential respondents. The CIC management was given the assurance that the purpose of the study was for academic purpose only.

3.8.3 Confidentiality

The study treats all responses with utmost confidentiality. The researcher protects the information about the identity of a respondent. This was achieved through maintaining confidentiality to ensure the protection of private information.

3.8.4 Privacy

Participants who participated in the study were not mentioned by their named by the researcher, the study design or the publication of the study results. Participants' privacy was protected, and their identity were not linked with their input into the study.

3.8.5 Anonymity

The respondents' anonymity was assured by ensuring the identity of individual subjects is not known to researchers. The respondents' details were not captured in the questionnaire.

3.9 Chapter Summary

This chapter presents the research design that guided this study. The chapter gives details on: research design, target population, sample and sampling technique, instruments of the study, pilot study, research validity, reliability test, and data collection procedure, data analysis and presentation and the ethical considerations.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.0 Introduction

This chapter presents data analysis, presentation, and interpretation of the study findings on digital transformation and the performance of the General Insurance Industry in Kenya; a case study of CIC General Insurance Company Limited. Therefore, this chapter is specifically structured into data analysis, interpretation, and presentation of the research findings.

4.1 Presentation of Findings

A total of 65 respondents were targeted for the study, who were selected from underwriting department, claims department, finance, Administration & Human resource, ICT department and marketing department. However, only 56 respondents who responded to this study, this indicated an overall response rate of 86 percent out of the 65 respondents who were sought for participation.

According to Mugenda and Mugenda (2009), a response rate of 50% is suitable for data collection and analysis, a response rate of 60% is termed as good, and a response rate of 70% or above is seen as outstanding. Because it is consistent with their findings, which state that for generalization, a response rate of 50% is suitable for data collection and analysis, a response rate of 60% is good, and a response rate of 70% or higher is exceptional, the response rate was declared reliable for data analysis. The excellent response rate was attributed to the data collection technique, which consisted of administering questionnaires in person by the researcher after informing the respondents of the study's actual aim and purpose statement.

Table 5: Study Response Rate

Response	Frequency	Percentage
Filled in questionnaires	56	86
Un returned questionnaires	9	14
Total	65	100

4.2 Respondents Demographic Information

The study sought to investigate demographic information about the respondents in terms of gender of the respondents, age of the respondents, academic qualifications of the respondents, duration of the respondents' working in the current firm and the department that the respondent was working at in the current institution.

4.2.1 Gender of the Respondents

The purpose of the study was to find out the gender of the respondents who took part in this research. According to the survey findings, a majority of 55% of respondents were males, while 45% were females. According to the findings of the study, the majority of employees in insurance firms are men, while women are fairly represented as well.

Table 6: Gender of the Respondents

	Frequency	Percent
Male	31	55
Female	25	45
Total	56	100

4.2.2 Age Bracket

The study further sought to establish the age category of the respondents within the insurance firm. According to the findings, the majority (48%, 27) were between the ages of 30 and 40, 23% (13) were between the ages of 41 and 45, 16% (9) were between the ages of 22 and 29, and 13% (7) were over the age of 46. According to the study findings, the majority of the insurance firm's employees were below 40 years. The retirement age of the company is 55 years.

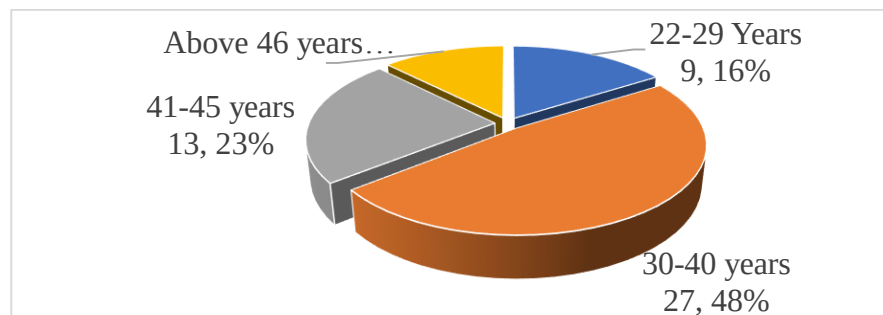


Figure 2: Age Bracket

4.2.3 Highest Level of Education

Respondents were requested to indicate the highest education level they had achieved. According to the survey findings, the majority (57%, 32) had a bachelor's degree as their greatest academic qualification, 32% (18) had a master's degree, 5% (3) had a diploma, and PHD as their highest education level, as revealed in each case. This signifies that the respondents possessed the necessary degree of education to answer the questions posed by the survey.

Table 7: Highest Level of Education

	Frequency	Percent
Diploma	3	5
Bachelors	32	57
Masters	18	32
PhD	3	5
Total	56	100

4.2.4 Duration of Working in the Current Organization

The research was interested and sought to find out the years that the staff have been working in the organization as compared to the years that the organization has been in operation. Figure 3 displays the outcomes. According to the results, the majority of the respondents, 32% (18), had worked for the current insurance firm for a period of three to four years, 23% (13) for five to six years, 18%(10) for seven to eight years, 14% (8) for less than two years, and 13% (7) for more than eight years. This indicates that the respondents are more qualified to respond to the inquiries that this study is attempting to address and that they are aware of the significance of the digital revolution and how it affects the performance of the insurance industry.

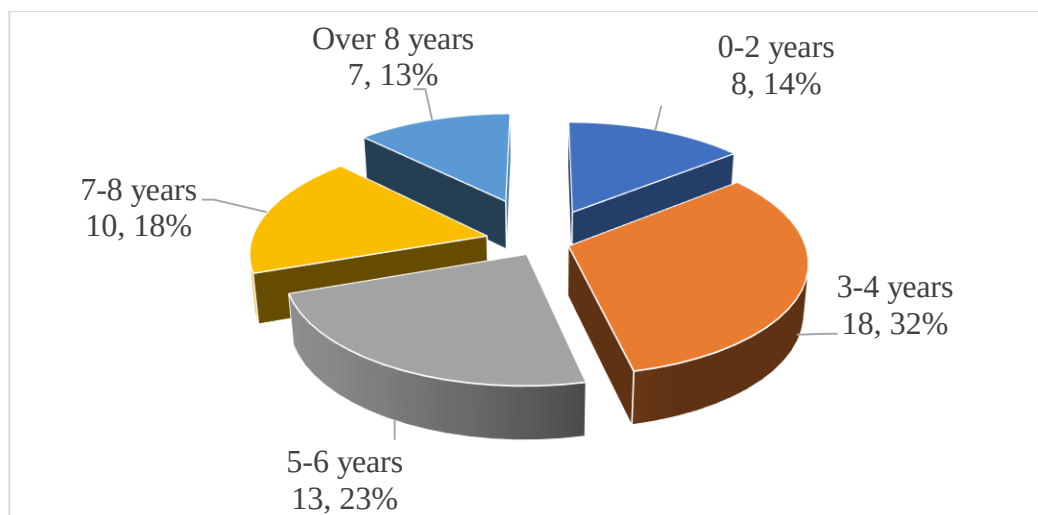


Figure 3: Duration of Working in the Current Organization

4.2.5 Department of Working

The research sought and established the department in which respondents were working. According to the study findings, 27% were working in ICT Department, 23% were working in Marketing, 18% of respondents were working in the underwriting department, 16% were in claim, finance, Administration and HR department as shown in Table 9. These departments are crucial in the insurance sector and the application of digital platforms in their activities. Therefore, they are in a better position to respond to the queries that this study seeks.

Table 8: Department of Working

	Frequency	Percent
Underwriting	10	18
Claims	9	16
Finance, Administration & HR	9	16
ICT Department	15	27
Marketing	13	23
Total	56	100

4.2.6 Reliability Results

A Cronbach's Alpha Coefficient value of 0.7 was used as the cut-off. All items whose value is less than 0.6 were considered weak, thus adjusted or left out. All the variables employed in this study have been proven to be reliable since the alpha value of Cronbach was above 0.70.

Table 10: Reliability Results

Variable	No. of Items	Cronbach's Alpha	Verdict
Big data analytics	5	0.748	Reliable
Internet of things	5	0.749	Reliable
Process automation	5	0.752	Reliable
Artificial intelligence	5	0.713	Reliable
Overall	5	0.7405	Reliable

4.3 Role of Big Data Analytics

The study aimed at finding out the role of big data analytics in the performance of the general insurance industry in Kenya. Table 11 shows the obtained results. According to the study results, respondents agreed their company gathers and stores data from various sources, both internal and external, as indicated by the mean score of 4.04. Respondents also agreed that data analytics contributes to the minimization of fraud cases in claims and that business analytics has increased the general profitability in the organization, as indicated by the mean scores of 3.98 and 3.95, respectively. In addition, respondents agreed that business analytics has increased the growth rate of sales revenue and that data analytics adds value to the organization as it contributes to faster decision making, as shown by the mean scores of 3.93 and 3.75, respectively. The average mean score of 3.93 and the average standard deviation of 0.861 show that respondents agreed that big data analytics influenced the performance of the General Insurance Industry in Kenya.

Table 11: Role of Big Data Analytics

	N	Mean	STDev
My company gathers and stores data from various sources both internal and external	56	4.04	0.738
Big data analytics adds value to the organization as it contributes to faster decision making	56	3.75	0.815
Big data analytics contributes to minimization of fraud cases in claims	56	3.98	0.820
Big data analytics has increased the general profitability in the organization	56	3.95	0.840
Big data analytics has increased the growth rate of sales revenue	56	3.93	1.093
Average	56	3.93	0.861

4.3.1 Model Summary for Big Data Analytics

The study investigated the role of big data analytics on the performance of the general insurance industry in Kenya. The study established that big data analytics contribute 21.8% towards the performance of the general insurance industry in Kenya, as indicated by $R^2 = 0.218$.

Table 12: Model Summary for Big Data Analytics

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.467 ^a	.218	.204	1.22380

a. Predictors: (Constant), big data analytics

4.3.2 ANOVA for Big Data Analytics

In this study, the test of the linearity between big data analytics and the performance of the general insurance industry in Kenya was conducted. Big data analytics had a significance value of .000, which is less than 0.05, according to the results. As a result, it is clear that big data analytics had a direct impact on Kenya's general insurance market's performance.

Table 13: ANOVA for Big Data Analytics

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	22.554	1	22.554	15.059	.000
	Residual	80.874	54	1.498		
	Total	103.429	55			

a. Dependent Variable: Performance of General Insurance

b. Predictors: (Constant), Big data analytics

4.3.3 Coefficients Correlation for Big Data Analytics

The study also establishes that there was a significant relationship between big data analytics and the performance of the general insurance industry in Kenya ($\text{sig} = .010$, $\text{sig} < 0.05$). The findings show that big data analytics had a substantial overall impact ($F = 15.059$, $p < 0.05$) on the performance of Kenya's general insurance sector. The results of this study accord with Ferraris et al. (2019) that BDA capabilities have a beneficial impact on organizations'

performances, as shown by the regression equation: The results further support Mugane (2018) finding that the use of big data analytics has a major impact on competitive advantage.

$$Y = 1.557 + 0.467X_1 + 0.580$$

Where;

Y –Performance (Dependent variable)

Independent Variable

X₁ – big data analytics

Table 14: Coefficients Correlation for Big Data Analytics

		Coefficients				
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.557	.580		2.686	.010
	Big data analytics	.570	.147	.467	3.881	.000

a. Dependent Variable: Performance of General Insurance

4.4 Internet of Things

The study requested the respondents to indicate their level of agreement with the statement relating to the internet of things on the performance of the general insurance industry in Kenya. From the findings, respondents agreed that IoT led to better risk assessment as illustrated by the mean score of 4.11. Respondents also agreed that the internet of things has enhanced better service quality, leading to an organization's better performance, and that IoT can lead to reduced claims cost management, as shown by the mean score of 3.98 in each case. Further, respondents agreed that IOT can lead to improved customer experience and that IoT can generate extra revenue due to better understanding of clients' needs, as depicted by the mean scores of 3.89 and 3.84, respectively. The average mean score (3.96) and average standard deviation (1.162) indicated that the respondents agreed with the aspects of the Internet of Things applied in their organizations, which in turn affects the performance of the General Insurance Industry in Kenya.

Table 15: Internet of Things

	N	Mean	STDev
Internet of things has enhanced better service quality leading to organization better performance	56	3.98	1.198
IoT can lead to better Risk assessment	56	4.11	1.021
IOT can lead to reduced claims cost Management	56	3.98	1.018
IOT can lead to improved customer experience	56	3.89	1.216
IoT can Generate extra revenue due to better understanding of clients' needs	56	3.84	1.359
Average	56	3.96	1.162

4.4.1 Model Summary for Internet of Things

The study investigated the contribution of the internet of things to the performance of the general insurance industry in Kenya. This shows a notable coefficient of determination between the internet of things and the performance of the general insurance industry ($R = 0.511$). Further, it is evident from the table that the coefficient of determination was significant ($R \text{ Square} = 0.261$, $P < 0.05$). This implies that 26.1% of the variation in performance is as a result of the internet of things.

Table 16: Model Summary for Internet of Things

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.511 ^a	.261	.248	1.18941

a. Predictors: (Constant), internet of things

4.4.2 ANOVA Analysis for Internet of Things

The significance of the regression model was tested using Analysis of Variance (ANOVA). The study found that the model is statistically significant in predicting how the internet of things affects the performance of the general insurance industry, as indicated by $F=19.110$ and $p=0.000$, which is less than 0.05. Given that $p < 0.05$, the model is significant at a 95% confidence level and that the variables in the equation are important.

Table 17: ANOVA Analysis for Internet of Things

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	27.034	1	27.034	19.110	.000
	Residual	76.394	54	1.415		
	Total	103.429	55			

a. Dependent Variable: Performance of General Insurance

b. Predictors: (Constant), internet of things

4.4.3 Coefficients Correlation for Internet of Things

The internet of things had a coefficient of 0.511 and $p < 0.05$. This meant that the relationship was significant at the 5% level. The standardized coefficients indicate the corresponding change in the dependent variable when a change of one unit is affected in the independent variable. Thus, a 1% improvement in the internet of things will lead to a 51.1% change in performance of general insurance. The finding of this study concurs with Mutuku and Muathe (2020) findings that IoT has enormous positive impact to business across various sectors. The finding of this study contends with Moreira (2019) established that IoT has the biggest influence on the value proposition, where clients will experience enhanced insurance coverage.

Therefore, the regression equation is;

$$Y = 2.025 + 0.511X_2 + 0.418$$

Where;

Y –Performance (Dependent variable)

Independent Variable

X_2 – Internet of Things

Table 17: Coefficients Correlation for Internet of Things

Coefficients ^a						
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	2.025	.418		4.844	.000
	internet of things	.483	.110	.511	4.371	.000

a. Dependent Variable: Performance of General Insurance

4.5 Process Automation

The study also examined the role of process automation in the performance of the general insurance industry in Kenya. Table 19 below indicates the results. The respondents were presented with five statements on the influence of process automation on the performance of the general insurance industry in Kenya. The majority of the respondents agreed that process automation has reduced manual tasks in service delivery, as shown by the mean score of 4.07. In addition, respondents agreed that process automation has enhanced a better working environment, leading to employee job satisfaction as shown by the mean score of 3.95. Further, respondents agreed that automated claims workflow allows the customer to keep track of the progress made on the claim settlement process without having to visit the branch and that process automation has improved connectivity with other service providers, leading to better service delivery to customers, as depicted by the mean score of 3.93 in each case. Lastly, respondents agreed that process automation has reduced operational costs, leading to higher profit margins as indicated by the mean score of 3.68. Based on the average mean (3.91) and average standard deviation (1.074), it was clear that the respondents agreed that process automation plays a key role in the performance of the General Insurance Industry in Kenya.

Table 18: Process Automation

	N	Mean	STDev
Process automation has improved connectivity with other service providers leading to better service delivery to customers	56	3.93	1.059
Process automation has reduced the operational costs leading to higher profit margins	56	3.68	1.146
Process automation has reduced manual tasks in the hence timely service delivery	56	4.07	1.189
Process automation has enhanced better working environment leading to employee Job Satisfaction	56	3.95	0.818
Automated Claims workflow allows the customer to keep track of the progress made on the claim settlement process without having to visit the branch	56	3.93	1.158
Average	56	3.91	1.074

4.5.1 Model Summary for Process Automation

Table 19 demonstrates the relationship between process automation, the independent variable, and the performance of general insurance, which is the dependent variable. This

shows that there is a strong correlation ($R = 0.586$) between process automation and the performance of general insurance. Further, it is evident from the table that the coefficient of determination was significant ($R^2 = 0.343$, $P < 0.05$). This means that process automation caused 34.3% of the difference in performance.

Table 19: Model Summary for Process Automation

Model Summary					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	
1	.586 ^a	.343	.331	1.12178	

a. Predictors: (Constant), Process Automation

4.5.2 ANOVA Results for Process Automation

Using Analysis of Variance (ANOVA), the significance of the regression model was tested. The study established that the model was statistically significant and important for predicting the role of process automation on the performance of general insurance in Kenya, as shown by $F = 28.192$ and $p = 0.000$, which is less than 0.05. Given that $p < 0.05$, the model is significant with a 95% degree of confidence, and the variables in the equation are significant.

Table 20: ANOVA Results for Process Automation

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	35.476	1	35.476	28.192	.000
	Residual	67.953	54	1.258		
	Total	103.429	55			

a. Dependent Variable: Performance

b. Predictors: (Constant), Process Automation

4.5.3 Coefficients Correlation for Process Automation

Process automation showed a coefficient of 0.586 and a p-value of less than 0.05. This indicated that the relationship was significant at the 5% level of significance. The standardized coefficients indicated the change in the dependent variable corresponding to a change of one unit in the independent variable. Thus, if process automation in Kenya went up by 1%, the performance of general insurance would go up by 58.6%. The findings of this study concurs with Kemboi (2018) that with banks adopting automated systems, customer service levels as well as customer relationships improved for the better, leading to improved

performance. Additionally, the study conforms to Otiso (2021) that increasing application of process automation leads to improved performance.

Therefore:

$$Y = \beta_0 + \beta_2 X_2 + \epsilon$$

Where:

Y is the dependent variable - performance of general insurance in Kenya,

B₀ is the regression coefficient/ **Y**-intercept,

β₂ is the slopes of the regression equation,

X₂ is the independent variable - process automation,

ε is the error term.

Thus, the regression equation for process automation and performance of general insurance in Kenya was;

$$Y = 1.381 + 0.586X_2 + 0.464$$

Table 21: Coefficients Correlation for Process Automation

		Coefficients ^a				
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.381	.464		2.976	.004
	Increase in profit	.616	.116	.586	5.310	.000

a. Dependent Variable: performance

4.6 Artificial Intelligence

Respondents were requested to indicate the extent to which aspects of artificial intelligence have influenced the performance of the general insurance industry in Kenya using a scale of 1–5, where (1-Strongly disagree, 2-Disagree, 3-Neutral, 4-Agree, and 5-Strongly agree). According to the study results that were obtained, it was revealed that respondents agreed that artificial intelligence has enhanced better decision making and that artificial intelligence can lead to reduced claims cost management as shown by mean scores of 3.89 and 3.80, respectively. Respondents further agreed that artificial intelligence can lead to improved customer experience and that artificial intelligence can lead to increased profit for the organization, as shown by the mean scores of 3.79 and 3.68, respectively. Lastly, respondents

moderately agreed that artificial intelligence can lead to better risk assessment, as shown by the mean score of 3.48. The overall mean score of 3.73 shows that the respondents who participated in the survey agreed that AI affects the performance of the general insurance industry in Kenya.

Table 22: Artificial Intelligence

	N	Mean	STDev
Artificial intelligence has enhanced better decision making	56	3.89	0.966
Artificial intelligence can lead to better risk assessment	56	3.48	0.953
Artificial intelligence can lead reduced claims cost management	56	3.80	1.494
Artificial intelligence can lead to improved customer experience	56	3.79	1.124
Artificial intelligence can lead to increased profit for the organization	56	3.68	1.266
Average	56	3.73	1.161

4.6.1 Model Summary for Artificial Intelligence

The results of the study indicated a direct relationship between artificial intelligence (independent variable) and the performance of the general insurance industry in Kenya (dependent variable). There was a significant correlation between artificial intelligence and the performance of the general insurance industry in Kenya ($R = 0.545$). Moreover, it was clear from the research findings that the coefficient of determination was significant (R Square = 0.297, $P < 0.05$).

Table 23: Model Summary for Artificial Intelligence

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.545 ^a	.297	.284	1.15999

a. Predictors: (Constant), artificial intelligence

4.5.2 ANOVA Results for Artificial Intelligence

An ANOVA analysis was carried out in order to try and test the significance of the model. From the study findings, the Sig-Value is equal to 0.000, which is less than 0.05. The significance results therefore indicate that the model is statistically significant in predicting

the relationship between artificial intelligence and the performance of the general insurance industry. The F-critical at the 5% level of significance was 22.866. This shows that the overall model was significant.

Table 24: ANOVA Results for Artificial Intelligence

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	30.768	1	30.768	22.866	.000
	Residual	72.661	54	1.346		
	Total	103.429	55			

a. Dependent Variable: Performance

b. Predictors: (Constant), artificial intelligence

4.6.2 Coefficients Correlation for Artificial Intelligence

The obtained coefficient correlation results indicated that it was statistically significant ($\beta = 0.545$, $t = 4.782$, $p = 0.05$). Therefore, the hypothesis that artificial intelligence influences the performance of the general insurance industry was therefore confirmed because there was a statistically significant. The findings of this study concurs with Eling et al., (2021) that artificial intelligence has the potential to revolutionize many undertakings across the insurance value chain process. Likewise, the study findings agree with Butner and Ho (2019) findings that AI can help in coming up with methods for better customer approval, effective time management, profits, and reducing fraud and operational complexities.

Table 25: Coefficients Correlation for Artificial Intelligence

Coefficients ^a					
Model		Unstandardized Coefficients		Standardized Coefficients	
		B	Std. Error	Beta	t Sig.
1	(Constant)	.974	.594		1.641 .107
	Artificial intelligence	.688	.144	.545	4.782 .000

a. Dependent Variable: Performance

4.7 Organizational Performance

The study further requested the respondents to indicate their levels of agreement with the statement related to the performance of general insurance in Kenya. According to the study results, respondents agreed that increased market share and improved turn-around times/speed of delivery were important factors that affected the performance of general insurance, as shown by mean scores of 4.30 and 4.00, respectively. As shown by the mean scores of 3.98 and 3.96, respondents agreed that lowering production costs and making employees happier were important to the performance of general insurance. An increase in profit, employee knowledge and skills, customer satisfaction, and sales were experienced in the insurance industry, as indicated by mean scores of 3.79, 3.77, 3.71, and 3.50, respectively. The average mean score of 3.88 and the average standard deviation of 1.084 show that respondents agreed with aspects of organizational performance used in this study.

Table 26: Organizational Performance

	N	Mean	STDev
Increase in sales	56	3.50	1.452
Increase in profit	56	3.79	1.303
Reduction on cost of production	56	3.98	1.087
Improved Turn-Around Times/speed of delivery	56	4.00	1.062
Customer satisfaction	56	3.71	1.371
Increased market share	56	4.30	0.761
Employee knowledge and skills	56	3.77	0.809
Employee satisfaction	56	3.96	0.830
Average	56	3.88	1.084

4.8 Inferential Analysis

To compute the correlation between the dependent variable and the independent variables, the study conducted and did inferential analysis, which involved Karl Pearson's coefficient of correlation, regression analysis, model summary, and a multiple regression analysis.

4.8.1 Karl Pearson's Coefficient of Correlation

To show the correlation between the study variables, the study used the Karl Pearson's coefficient of correlation (r).

Table 27: Karl Pearson's Coefficient of Correlation

		Performance	Data and analytics	Data and analytics	Process Automation	Artificial intelligence
Performance	Pearson Correlation	1				
	Sig. (2-tailed)					
Data and analytics	Pearson Correlation	.467	1			
	Sig. (2-tailed)	.000				
Internet of things	Pearson Correlation	.511	.011	1		
	Sig. (2-tailed)	.000	.935			
Process Automation	Pearson Correlation	.586	.303	.567	1	
	Sig. (2-tailed)	.000	.023	.000		
Artificial intelligence	Pearson Correlation	.545	.488	.259	.280	1
	Sig. (2-tailed)	.000	.000	.054	.037	

The study findings established a strong positive correlation between data and analytics, the internet of things, process automation, and artificial intelligence, as demonstrated by correlation values of 0.467, 0.511, 0.586, and 0.545, respectively. This result reveals that there was a strong positive correlation between these four independent variables used in this study. The findings reveal that process automation, artificial intelligence, the Internet of things, and big data analytics have a significant impact on the performance of the general insurance industry. This is indicated by the fact that the results collected indicate that the four digital transformation components studied in this research have the most influence on the performance of the general insurance industry.

4.8.2 Multiple Regression Analysis

A multiple regression analysis was run to determine the relationship between independent variables (data and analytics, internet of things, process automation, and artificial intelligence) and dependent variables. Table 29 below shows the results.

Table 28: Model Summary

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.757 ^a	.573	.540	.93043

The model summary revealed a direct relationship between the dependent variable (performance of the general insurance industry) and the independent variables (data and analytics, internet of things, process automation, and artificial intelligence) under this study. There was a strong significant correlation ($R = 0.757$) between data and analytics, the internet of things, process automation, and artificial intelligence. In addition, it was obvious from the table that the coefficient of determination was substantial and statistically significant ($R^2 = 0.573$, $P < 0.05$). This indicated that 57.3% of the variance in the performance of the general insurance industry was attributable to data and analytics, the internet of things, process automation, and artificial intelligence. This therefore means that there be other factors not studied in this research that account for 42.7% of the performance of the general insurance industry. Therefore, further research to investigate the other (42.7%) digital transformation aspects that tend to improve the performance of the general insurance industry should be conducted.

Table 29: ANOVA

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	59.278	4	14.819	17.118	.000
	Residual	44.151	51	.866		
	Total	103.429	55			

Using Analysis of Variance, the significance of the regression model was examined (ANOVA). The model was found to have a statistically significant influence on digital transformation and the performance of the general insurance industry in Kenya as shown by $F = 17.118$ and $p = 0.000$, which is less than 0.05. Given that $p < 0.05$, the model is significant with a 95% degree of confidence, and the variables in the equation are significant.

Table 30: Coefficients

		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	.860	.582		1.477	.146
	Data and analytics	.316	.138	.259	2.286	.026
	Internet of things	.278	.112	.294	2.484	.016
	Process Automation	.279	.126	.265	2.214	.031
	Artificial intelligence	.339	.139	.269	2.443	.018

The results in Table 31 show that the regression weights of four of the independent variables were significant. The researcher regression used unstandardized coefficients because they are

intuitive to interpret and understand, and also, they are preferable for use in calculations and analysis (Siegel, 2016). Thus, big data analytics with a coefficient of 0.316 and $p < 0.05$, internet of things with a coefficient of 0.278 and $p < 0.05$, process automation with a coefficient of 0.279 and $p < 0.05$, and artificial intelligence had a coefficient of 0.339 with $p < 0.05$. This meant that the relationship was significant at the 5% level.

The standardized coefficients indicate the corresponding change in the dependent variable when a change of one unit is affected in the independent variable. Therefore, a 1% increase in the use of big data analytics will cause a 31.6% change in the performance of the general insurance industry; a 1% increase in the use of the internet of things will cause a 27.8% increase in the performance of the general insurance industry's employees; a 1% increase in the use of process automation will cause a 27.9% increase in the performance of the general insurance industry's employees; and a 1% increase in the use of artificial intelligence would cause a 33.9% improvement in the performance of the general insurance industry.

As per the SPSS results in the table above, the following multiple regression equation was generated:

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

$$Y = 0.860 + 0.316 X_1 + 0.278 X_2 + 0.279 X_3 + 0.339 X_4$$

Where;

Y – Performance of insurance industry (Dependent variable).

4.9 Limitations of the Study

The researcher encountered some limitations during the study. Some respondents were still hesitant to participate in the study for fear of revealing sensitive information about their business operations. To mitigate against this, the researcher assured them that the study was purely for academic purposes only, further, an introduction letter from the university was provided to prove the same. The researcher also assured them that all the information that was to be provided was to be kept confidential.

4.9.1 Chapter Summary

This chapter presents the responses to the various aspect of the questionnaires as responded for the various variables. The chapter gives details on; analysis of the bio data for the for the respondents including their gender, age, level of educations. Further, the analysis for the

various variables have been analysed; big data analytics, internet of things, process automation and as well as internet of things. Tests were done to establish the relationship of the independent variables to the dependent variable. Further the multiple regression for the variables and finally the limitation of the study.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATION

5.0 Introduction

This chapter presents the summary, conclusion, and recommendations drawn on digital transformation and the performance of the general insurance industry in Kenya, with a focus on CIC General Insurance Company Limited. Thus, the chapter is made up of a summary of the research results, a conclusion, and suggestions for further research.

5.1 Summary of Research Findings

The objectives of this study were to find out how the internet of things, big data data analytics, process automation, and artificial intelligence affects the performance of general insurance company

The first study objective sought to examine the role of big data analytics on the performance of the general insurance industry in Kenya. According to the study results that were obtained, it was established that the company gathers and stores data from various sources, both internal and external. The study also found that data analytics contributes to the minimization of fraud cases in claims and that business analytics has increased the general profitability in the organization. The study established that big data analytics contribute 21.8% towards the performance of general insurance industry in Kenya. Moreover, big data analytics had a significance value of .000, which is less than 0.05. Thereby, it was clear that there was a linear relationship between big data analytics and the performance of the general insurance industry in Kenya. The results as well indicated that the overall influence of big data analytics on the performance of general insurance industry in Kenya was significant ($F = 15.059$, $p < 0.05$).

The second study objective sought to examine the influence of the internet of things on the performance of the general insurance industry in Kenya. According to the study results that were obtained, it was established that IoT led to better risk assessment. The study also found that the internet of things has enhanced better service quality, leading to an organization's better performance, and that IoT can lead to reduced claims cost management. The study results also established that 26.1% of the variation in performance is as a result of the internet of things. The model was found to be statistically significant in predicting how the internet of

things affects the performance of the general insurance industry ($F = 19.110$, and $p = 0.000$, which is less than 0.05). The results also showed that the internet of things has an effect on the performance of the insurance industry as a whole.

The third objective sought to examine the role of process automation in the performance of the general insurance industry in Kenya. According to the study results that were obtained, it was established that process automation has reduced manual tasks in service delivery. Process automation has also enhanced a better working environment, leading to employee job satisfaction. Further, it was observed that process automation influenced around 34.3% of the performance of general insurance in Kenya. Hence, process automation had a Sig-Value of 0.000 , which was less than 0.05 , indicating that there was a statistical significance relationship between process automation and the performance of general insurance in Kenya.

The fourth objective sought to examine the effect of artificial intelligence on the performance of general insurance in Kenya. According to the study results that were obtained, it was established that artificial intelligence has enhanced better decision making and that artificial intelligence can lead to reduced claims cost management. The study also found that artificial intelligence can lead to improved customer experience and that artificial intelligence can lead to increased profit for the organization. In addition, it was found that artificial intelligence influenced around 29.7% of the performance of the general insurance industry in Kenya. Therefore, artificial intelligence had a significance value of 0.000 , which is less than 0.05 . Thus, there was a linear relationship between artificial intelligence and the performance of the general insurance industry in Kenya.

5.2 Conclusion

The study sought to investigate the relationship between the internet of things, big data analytics, process automation, and artificial intelligence on the performance of a general insurance company. Based on the findings, the study came up with the following conclusion:

The study concluded that companies gather and store data from various sources, both internal and external, for the purpose of understanding the performance of the general insurance industry in Kenya. The study also found that data analytics helps reduce insurance fraud in insurance claims and that business analytics has made the organization more profitable

overall. The study also concluded that there was a linear relationship between big data analytics and the performance of the general insurance industry in Kenya.

To the objective relationship between the internet of things and the performance of the general insurance industry in Kenya, it was concluded that the internet of things influenced the overall performance of the general insurance industry to a very large extent. Further, it was concluded and established that IoT led to better risk assessment. It was also concluded that there was a linear relationship between the internet of things and the performance of the general insurance industry.

On the objective of the relationship between process automation and the performance of the general insurance industry, it was concluded that process automation has reduced manual tasks in the industry, hence enabling timely service delivery. It was also concluded that process automation influences the performance of general insurance in Kenya. It was further concluded that there was a statistically significant relationship between process automation and the performance of general insurance in Kenya.

On the objective of the relationship between artificial intelligence and the performance of general insurance in Kenya, it was concluded that artificial intelligence has enhanced better decision making and that artificial intelligence can lead to reduced claims cost management. In Kenya, artificial intelligence influenced the performance of general insurance. The study concludes that artificial intelligence can lead to improved customer experience and that artificial intelligence can lead to increased profit for the organization. Finally, the study found a linear relationship between artificial intelligence and the performance of Kenya's general insurance industry.

5.3 Recommendations

Based on the study findings, the study recommends that insurance firms should embrace big data analytics in their operational activities. The advantages of adopting this digital transformation include improved risk or fraud management, giving the company access to sophisticated analytics that can yield priceless insights. Big data analytics also raises the standard of goods and services. It enables the company to concentrate client segmentation and create potential new offerings. Big data analytics has many benefits, but these benefits also carry a risk. Understanding where a company truly is, where it needs to be, and how to

start in order to increase its commercial value should be given more importance in order to get insurance firms on the path to greater success in the field of big data analytics management projects. The methods of auditing and exploiting the data from corporate data sources would prove to be of great assistance as they would generate a better understanding of current data assets. There are numerous ways for businesses to derive value from the data they already possess.

The report suggests that insurance companies take into account IoT as a tool for securing a competitive edge in the insurance industry. The insurance sector has the potential to be disrupted and transformed by the Internet of Things (IoT). IoT-enabled devices are pervasive today and produce a vast amount of data. The corporate world is changing as a result of the Internet of Things, supervisory control and big data acquisition, and industrial IoT, which have enabled a connected experience that has expedited and simplified numerous organizational procedures. Industry executives and governments need to be flexible and accept the rapid change in digital technology if the IoT is to be implemented effectively. To promote data-driven technology and innovation-driven growth, they include legislation and legal frameworks. Insurance companies can benefit from the IoT in the future with the appropriate mix of regulations and tech professionals. So, in order for insurance businesses to perform better, they must take the effort to incorporate IoT into their existing IT strategy.

In regards to process automation, the study suggested that it is necessary to implement a single system that, in the manager's opinion, should be dependable and one that will increase output, performance, and cut costs. To get these advantages, though, you must have the willpower to get through the obstacles. It is advised that firms avoid interfering with other company objectives when weighing these challenges against the possible advantages of automation. Making sure that the company has enough staff to support and maintain the system is another advice that businesses should keep in mind when considering business automation. Additionally, a lot of managers have a tendency to believe that cost-cutting is the primary motivation for automating company activities. However, the majority of the time, the emphasis is on enhancing the user experience. This is so because automation raises service standards, which ultimately results in lower prices.

According to the survey, artificial intelligence accounts for 29.7% of the total. This implies that the insurance industry has not adopted AI to its full potential. Along the whole insurance value chain, from underwriting and claims administration to distribution and customer service

to asset management, artificial intelligence is going to have a significant impact. Therefore, insurance executives need to be aware of the emerging technologies that will contribute to this shift and how AI may support businesses in developing novel products, gaining insightful new information from new data sources, streamlining corporate operations, and enhancing customer service. Since it enables insurers to apply data modeling, machine learning, and predictive analysis to the entire insurance value chain, artificial intelligence should be adopted in the insurance sector. The results have been positive in the form of an increased profitability and improved customer satisfaction.

5.4 Suggestion for Further Research

This study investigated the association between digital transformation and the performance of the general insurance industry in Kenya. The study suggests that further research be done on challenges affecting adoption of digital transformation within the organization. Similar studies should be conducted in different sectors of the economy to establish whether the connection between digital transformation and the performance of the general insurance industry could be common across the sectors. Since the variables in this study only accounted for 57.3% of the performance of general insurance, another study should be done to find the other digital transformation aspects that accounts for the 43.7% of the performance insurance industry.

REFERENCES

- Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17(1), 99-120.
- Bell, E., Bryman, A., & Harley, B. (2018). *Business research methods*. Oxford university press.
- Blumberg, B., Cooper, D., & Schindler, P. (2014). *EBOOK: Business Research Methods*. McGraw Hill.
- Bogdan, R., & Biklen, D. (2013). Handicapism. In *Foundations of disability studies*, 1-16. Palgrave Macmillan, New York.
- Butner, K. & Ho, G. (2019), "How the human-machine interchange will transform business operations", *Strategy & Leadership*, 47 (2), 25-33.
- Cheruiyot, S. K. (2018). *Artificial Intelligence and Operational Performance of Selected Service Organisations in Nairobi, Kenya* (Doctoral dissertation, University of Nairobi).
- Cheruto, S., & Kyalo, J. (2021). Transaction Efficiency and Performance of Digital Firms in Nairobi County, Kenya.
- de Ferrieres, M. (2021). The rise of the digital economy: Estimating the impact of a new generation of entrepreneurs as disruptive entrants in the insurance industry in Singapore.
- Demir, K. (2006). School management information systems in primary schools. *The Turkish Online Journal of Educational Technology*, 5 (2), 32–45.
- Dick, S. (2019). Artificial intelligence.
- Do, T. D., Pham, H. A. T., Thalassinou, E. I., & Le, H. A. (2022). The impact of digital transformation on performance: evidence from Vietnamese commercial banks. *Journal of Risk and Financial Management*, 15(1), 21.
- Drost, E. A. (2011). Validity and reliability in social science research. *Education Research and perspectives*, 38(1), 105-123.

- Eckert, C., Neunsinger, C., & Osterrieder, K. (2022). Managing customer satisfaction: digital applications for insurance companies. *The Geneva Papers on Risk and Insurance-Issues and Practice*, 1-34.
- Elena-Iuliana, I., & Maria, C. (2016). Organisational performance -A concept that self-seeks to find itself. *Annals of Constantin Brancusi' University of Targu-Jiu. Economy Series*, (4).
- Eling, M., & Jia, Ruo. (2019). Efficiency and profitability in the global insurance industry. *Pacific-Basin Finance Journal*.
- Ellul, A., & Yerramilli, V. (2010). Strong risk controls, lower risk: evidence from U.S. bank holding companies. Indiana University, *Working Paper*.
- Ferraris, A., Mazzoleni, A., Devalle, A., & Couturier, J. (2019). Big data analytics capabilities and knowledge management: impact on firm performance. *Management Decision*.
- Flick, U. (2018). *An introduction to qualitative research*. sage.
- Fogelman, K., & Comber, C. (2002). Surveys and sampling. *Research methods in educational leadership and management*, 93-107.
- Frankfort-Nachmias, C., & Nachmias, D. (2014). *Study guide for research methods in the social sciences*. Macmillan.
- Garcia, A. J., Toril, M., Oliver, P., Luna-Ramirez, S., & Garcia, R. (2019). Big data analytics for automated QoE management in mobile networks. *IEEE Communications Magazine*, 57(8), 91-97.
- Gilbert, B. A, McDougall, P. P., & Audretsch, D. B. (2008). Clusters, knowledge spillovers and new venture performance: an empirical examination. *Journal of Business Venturing*, 23(4), 405–422.
- Goswami, B. K., & Upadhyay, Y. (2019). An empirical study on digital transformation and its impact on employee engagement. In *Proceedings of 10th International Conference on Digital Strategies for Organizational Success*.
- Hess et al., (2016). Options for formulating a digital transformation strategy. *MIS Quarterly Executive*, 15(2), 6.
- IAIS 2018 - International Association of Insurance Supervisors, Annual Report 2018

- Ji-fan Ren, S., Wamba, S.F., Akter, S., Dubey, R., & Childe, S.J. (2017) Modeling quality dynamics, business value and firm performance in a big data analytics environment. *International Journal of Production Research* 55, 5011–5026
- Kagechu I. (2018) *Impact of Big Data on Organizational Performance: A Case of Listed Commercial Banks in Kenya*. (Master's Thesis, United States International University Africa).
- Kairu, E. W., Wafula, M. O., Okaka, O., Odera, O. & Akerele, E. K. (2013). Effects of Balanced Scorecard on performance of firms in the service sector, *European Journal of Business and Management*, 5 (9), 81-88
- Kane, G. C. (2017) "In the hotel industry, digital has made itself right at home," *MIT Sloan Management Review* 58(4), 1-9.
- Kaplan, R., & Norton, D. (2013). *Alignment: Using the balance scorecard to create corporate synergies*. Harvard Business School Press.
- Kasoa, J. N (2020). *Effect of Smart Data Analytics on Organizational Performance of the Telecommunication Industry: A Case of Safaricom Limited*. (Master's Thesis, United States International University - Africa).
- Kemboi J, P. (2018). *Effects of automation on performance of commercial banks in Kenya: A case of national bank of Kenya* (Doctoral dissertation, United States International University-Africa).
- Kombo, D. K., & Tromp, D. L. A. (2009). *Proposal and Thesis Writing, an Introduction*. Lusaka.
- Kothari, S. P., Ramanna, K., & Skinner, D. J. (2010). Implications for GAAP from an analysis of positive research in accounting. *Journal of Accounting and Economics*, 50(2-3), 246-286.
- Kreutzer, R. T., & Sirrenberg, M. (2020). *Understanding artificial intelligence*. Springer International Publishing
- Kumar, R., Shrestha, M., & Badir, Y. (2021). Digital transformation of financial institution and its impact on their profitability. *Copyright© 2021 by Information & Telecommunication Technology Program (ITTP)*.

- Lee, I., & Lee, K. (2015). The internet of things (IOT): Applications, investments, and challenges for enterprises. *Business Horizons*, 58(4):431 - 440.
- Leviäkangas, P. (2016). Digitalisation of Finland's transport sector. *Technology in Society*, 47, 1-15.
- Li, L., Su, F., Zhang, W., & Mao, J. Y. (2018). Digital transformation by SME entrepreneurs: A capability perspective. *Information Systems Journal*, 28(6), 1129-1157.
- Malik, A. (2011). Creative Accounting Practice and Business Performance, Evidence from Pakistan International, *Journal of Business Performance Management*, 12(3), 228-241.
- Mugane, G. M. (2018). *Big data analytics and competitive advantage of commercial banks and fintech companies in Kenya* (Doctoral dissertation, University of Nairobi).
- Mugenda, A. (2008). Social science research: Conception, methodology and analysis. *Nairobi: Kenya Applied Research and Training Services*, 10(1).
- Mugenda, A. G., & Mugenda, A. G. (2019). Research methods dictionary. *Nairobi, Kenya: Applied Research & Training Services*.
- Müller, O., Fay, M., & Vom Brocke, J. (2018). The effect of big data and analytics on firm performance: An econometric analysis considering industry characteristics. *Journal of Management Information Systems*, 35(2), 488-509.
- Mutuku, M., & Muathe, S. M. (2020). Nexus Analysis: Internet of things and business performance. *International Journal of Research in Business and Social Science* (21474478), 9(4), 175–181.
- Nadkarni, S., & Prügl, R. (2021). Digital transformation: a review, synthesis and opportunities for future research. *Management Review Quarterly*, 71(2), 233-341.
- Ndambo, D. (2016). *Big Data Analytics And Competitive Advantage Of Commercial Banks And Insurance Companies In Nairobi, Kenya* (Doctoral dissertation, University of Nairobi).
- Ngiri, S. M. (2021). *Effect of Technology Adoption on Underwriting Processes among Top Five Insurance Companies in Nairobi County* (Doctoral dissertation, United States International University-Africa).

- Omwono, H.A. (2018). *Cloud Data Hosting and Organizational Performance Among Insurance Firms in Kenya*. (Master's Thesis, University of Nairobi) erepository.uonbi.ac.ke
- Orodho, J. A. (2009). Elements of education and social science research methods. *Nairobi/Maseno*, 2(6), 26-133.
- Oso, W. Y., & Onen, D. (2011). Writing Research Proposal and Report: A Handbook for Beginning Researchers. *Nairobi-Kenya: The Jomo Kenyatta Foundation*.
- Otiso S O. (2021). *Effect of Technology on the Performance of Insurance Companies in Kenya* (Master's Thesis, University of Nairobi).
- Pareek, M., Pandey, M.K. & Priyadarshi, P (2020) Emerging technologies enabling the digital transformation of motor insurance in India. *Indian Journal of Science and Technology* 13(45): 4532-4540
- Penrose, E. T. (1959). *The Theory of the Growth of the Firm*. New York: John Wiley.
- Porter's, V. C. M. (1985). What Is Value Chain.
- Price, D. P., Stoica, M., & Boncella, R. J. (2013). The relationship between innovation, knowledge and performance in family and non-family firms: An analysis of SMEs. *Journal of Innovation and Entrepreneurship*, 2(14), 1-20.
- Rayna, T., & Striukova, L. (2016). From rapid prototyping to home fabrication: How 3D printing is changing business model innovation. *Technological Forecasting and Social Change*, 102, 214-224.
- Reis, J., Amorim, M., Melão, N., Cohen, Y., & Rodrigues, M. (2019, July). Digitalization: A literature review and research agenda. *In International Joint conference on Industrial Engineering and Operations Management* (443-456).
- Rogers, E.M. (2003). *Diffusion of Innovations* (5th ed.). New York: Free Press.
- Sahu, N. (2019). *Investigating the Critical Success Factors of Digital Transformation for Improving the Customer Experience in Australian Organisations* (Doctoral dissertation, RMIT University Melbourne, Australia).
- Salatin, P., Yadollahi, F. & Eslambolchi, S., 2014. The effect of ICT on insurance industry in selected countries. *Research Journal Of Economics, Business And ICT*, 9(1).

- Schilke, O. (2014). On the contingent value of dynamic capabilities for competitive advantage: The nonlinear moderating effect of environmental dynamism. *Strategic management journal*, 35(2), 179-203.
- Sharkasi, N., & Hemachandra, S. (2021, June). Digital transformation induced by the Covid-19 Pandemic. In *Digital Marketing & e-Commerce Conference*, 50-61. Springer, Cham.
- Teece, D. J., Pisano, G. & Shuen, A. (1997). 'Dynamic capabilities and strategic management. *Strategic Management Journal*, 18 (7) 509– 33.
- Teece, D. J. (2007). Explicating dynamic capabilities: the nature and microfoundations of (sustainable) enterprise performance. *Strategic management journal*, 28(13), 1319-1350.
- Teece, D. J. (2014). The foundations of enterprise performance: Dynamic and ordinary capabilities in an (economic) theory of firms. *Academy of management perspectives*, 28(4), 328-352.
- Trochim, W. M. K. (2006). *Introduction to validity: The best available approximation to the truth of a given proposition, inference, or conclusion*.
- Trott P. (2008). *Innovation Management and New Product Management*, (4th ed.) Pearsons Education limited.
- United Nations Economic Commission for Africa, UNECA 2020).
- Vijayakumar, R. V., & Tamizhselvan, R. (2010). The effect of firm size on profitability of firms in Nigeria, *Academic Journal*, 38(3), 412-443.
- Wamba, S. F., Gunasekaran, A., Akter, S., Ren, S. J. F., Dubey, R., & Childe, S. J. (2017). Big data analytics and firm performance: Effects of dynamic capabilities. *Journal of Business Research*, 70, 356-365.
- Wang, H.C., He, J., & Mahoney, J.T. (2009). Firm-specific knowledge resources and competitive advantage: The roles of economic- and relationship-based employee governance mechanisms. *Strategic Management Journal*, 30(4), 1265–1285.
- Yang, M. G. M., Hong, P., & Modi, S. B. (2011). Impact of lean manufacturing and environmental management on business performance: An empirical study of

manufacturing firms. *International Journal of production economics*, 129(2), 251-261.

Yeow, A., Soh, C., & Hansen, R. (2017). Aligning with new digital strategy: A dynamic capabilities approach. *Journal of Strategic Information Systems*.

Zhai, H., Yang, M., & Chan, K. C. (2022). Does digital transformation enhance a firm's performance? Evidence from China. *Technology in Society*, 68, 101841.

Zikmund, W. G., Babin, B. J., Carr, J. C., & Griffin, M. (2013). *Business Research Methods*. Cengage learning.

APPENDICES

Appendix I: Letter of Introduction

July 2022

Dear Respondent,

I study at Management University of Africa pursuing a Masters in Management and Leadership. For the partial fulfillment of the requirement for the award of the degree in management and leadership, I am conducting a study title: **DIGITAL TRANSFORMATION AND PERFORMANCE OF GENERAL INSURANCE COMPANIES IN KENYA: A CASE STUDY OF CIC INSURANCE COMPANY LIMITED**

Therefore, I request your assistance in filling the attached questionnaire to the best of your skills and knowledge. The material and responses that you will provide are strictly for academic purposes. The responses shall not be used for other purpose and further your identity or names shall not appear in this study. All the information provided will be treated with utmost of confidentiality. A copy of the final academic report can be made available upon your request.

I will appreciate your timely response. Your input will go a long way to facilitate this Academic Research study. For any clarification, please contact the Researcher as below details.

Thank You

Yours Faithfully,

Benjamin Gitau – 0721 87 05 87

The Management University of Africa

Appendix II: Questionnaire

DIGITAL TRANSFORMATION AND PERFORMANCE ORGANISATION

RESEARCH QUESTIONNAIRE

Instructions: Please be as honest and objective in answering the questions. Please respond to the all questions as applicable by marking the relevant box with a tick (✓).

Confidentiality: Your responses provided will be strictly confidential. No reference will be made concerning any individual(s) in the report of the study.

Section A: Background Information

1. Kindly select your gender

Male ☐ Female ☐

2. Please select your age bracket in complete years.

18-21 years ☐ 22-29 years ☐ 30-40 years ☐

41-45 years ☐ 46+ years ☐

3. Please select your highest level of education?

Secondary ☐ Diploma ☐ Bachelors ☐ Masters ☐ PhD ☐ Others ☐

4. Please select the number of years you have worked for the current employer

0-2 years ☐ 3- 4 years ☐ 5-6 years ☐

7-8 years ☐ 9-10 years ☐ More than 10 years ☐

5. Please select your department

BDD/Marketing ☐ Administration/HR ☐ Underwriting ☐

Finance ☐ ICT ☐ Claims ☐

KEY:

1=Strongly disagree(SD), 2=Disagree(D), 3= Neutral(N), 4=Agree(A), 5=Strongly agree(SA)

Section B: Role of Big Data Analytics

Please rate the following based on your view:

1=Strongly disagree, 2=Disagree, 3= Neutral, 4=Agree, 5=Strongly agree

		SD	D	N	A	SA
		1	2	3	4	5
1	My company gathers and stores data from various sources both internal and external					
2	Big Data analytics adds value to the organization as it contributes to faster decision making					
3	Big Data analytics contributes to minimization of fraud cases in claims					
4	Big Data analytics has increased the general profitability in the organization					
5	Big Data analytics has increased the growth rate of sales revenue					

What recommendation on the role of big data analytics on performance could you make to your organization.....

.....

Section C Impact of Internet of Things (IoT) – example connection between mobile phone to systems

Please rate the following based on your view:

1=strongly disagree, 2=Disagree, 3= Neutral, 4=Agree, 5=Strongly Agree

		SD	D	N	A	SA
		1	2	3	4	5
1	Internet of things has enhanced better service quality leading to organization better performance					
2	IoT can lead to better Risk assessment					
3	IOT can lead to reduced claims cost Management					
4	IOT can lead to improved customer experience					
5	IoT can Generate extra revenue due to better understanding of clients' needs					

What recommendation on the role of internet of things on performance could you make to your organization.....

D Role of Process Automation

Please rate the following based on your view:

1=Strongly disagree, 2=Disagree, 3= Neutral, 4=Agree, 5=Strongly Agree

		SD	D	N	A	SA
		1	2	3	4	5
1	Process automation has improved connectivity with other service providers leading to better service delivery to customers					
2	Process automation has reduced the operational costs leading to higher profit margins					
3	Process automation has reduced manual tasks in the hence timely service delivery					
4	Process automation has enhanced better working environment leading to employee Job Satisfaction					
5	Automated Claims workflow allows the customer to keep track of the progress made on the claim settlement process without having to visit the branch					

What recommendation on the role of process Automation on performance could you make to your organization.....

Section E

Impact of Artificial Intelligence: Examples – robots/machine learning, predictive models, prescriptive models

Please rate the following based on your view:

1= Strongly disagree, 2=Disagree, 3= Neutral, 4=Agree, 5=Strongly Agree

		SD	D	N	A	SA
		1	2	3	4	5
1	Artificial intelligence has enhanced better decision making					
2	Artificial intelligence can lead to better risk assessment					
3	Artificial intelligence can lead reduced claims cost management					
4	Artificial intelligence can lead to improved customer experience					
5	Artificial intelligence can lead to increased profit for the organization					

What recommendation on the role of artificial intelligence big data analytics on performance could you make to your organization.....

Section F: Performance

To what extent is your organizational performance measured using the below parameters?

Tick where appropriate on a scale of 1-5 where:

1= Strongly disagree, 2=Disagree, 3= Neutral, 4=Agree, 5=Strongly Agree

		SD	D	N	A	SA
		1	2	3	4	5
1	Increase in sales					
2	Increase in profit					
3	Reduction on cost of production					
4	Improved Turn-Around Times/speed of delivery					
5	Customer satisfaction					
6	Increased market share					
7	Employee knowledge and skills					
8	Employee satisfaction					

What recommendation on performance measurement could you make to your organization.....

THANK YOU – JULY 2022

Appendix III: Authorization Letter



Date: 25th May 2022

TO WHOM IT MAY CONCERN

BENJAMIN GITAU- MML/13/00152/2/18

This letter serves to introduce the above named who is a (Master of Management and Leadership) student and is interested in carrying out research on Role of Digital Transformation in General Insurance Companies Performance in Kenya; A case study of CIC General Insurance Company Ltd

Any assistance accorded to him in pursuit of this study will be greatly appreciated.

Yours Sincerely,

Juster Nyaga
Dean, School of Management and Leadership

Appendix V: NACOSTI Letter

 REPUBLIC OF KENYA	 NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION
Ref No: 772479	Date of Issue: 06/June/2022
RESEARCH LICENSE	
	
This is to Certify that Mr. BENJAMIN m GITAU of The Management University of Africa, has been licensed to conduct research in Nairobi on the topic: ROLE OF DIGITAL TRANSFORMATION ON PERFORMANCE OF GENERAL INSURANCE COMPANIES IN KENYA: A CASE STUDY OF CIC INSURANCE COMPANY LIMITED for the period ending : 06/June/2023.	
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