

**THE EFFECT OF KNOWLEDGE MANAGEMENT PRACTICES ON THE  
PERFORMANCE OF TELECOMMUNICATION COMPANIES IN KENYA**

**By**

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## DECLARATION

I declare that this dissertation is my original work and has not been previously published or submitted elsewhere for the award of the degree of Master of Science (Knowledge Management and Information).

I also declare that this dissertation contains no written material or published by other people except where due reference is made and the author duly acknowledged.

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## ABSTRACT

Knowledge management practices are considered vital requirements for organizational survival and achieving competitiveness. Knowledge management is also prerequisite because it assists organizations in achieving their capabilities and attaining their organizational goals and objectives. Knowledge management improves organizational performance. Organizations recognize knowledge as a strategic resource for competitive advantage, survival, and business success. Telecommunication companies in Kenya have experienced poor deployment and a lack of knowledge management practices, causing poor performance. Kenya Telecommunication companies operate in a challenging environment characterized by changing regulations, increased demand for innovation demand, social exclusion, especially among the youth, and increased competition from within the telecommunication industry. However, there is a dire need for telecommunication companies in Kenya to adopt knowledge management practices to improve organizational performance. This study's objectives include: to establish the effect of knowledge acquisition on the performance of telecommunication companies in Kenya, to determine the effect of knowledge storage on the performance of telecommunication companies in Kenya, to find out the effect of knowledge distribution on the performance of telecommunication companies in Kenya, and to establish the effect of knowledge use on the performance of telecommunication companies in Kenya. The study's target population was 650 participants. The study deployed stratified random sampling to select an appropriate sample size. Data was analyzed using Statistical Package for the Social Sciences (SPSS) version 20. The study's findings hope to be valuable to the telecommunication companies in Kenya.

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## **DEDICATION**

I dedicate this dissertation to my parents, Mr. and Mrs. Kaplong. I am indebted for your support, prayers, and contribution throughout my education.

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## ACRONYMS AND ABBREVIATIONS

**KM**

Knowledge Management

## OPERATIONAL DEFINITION OF TERMS

- Knowledge management practices** This involves the management and utilization of knowledge capabilities (Syed et al., 2021).
- Telecommunication companies** These are companies that transmit data, voice, and audio (Business Wire, 2019).
- Performance** This refers to the achievement of organizational objectives by the telecommunication companies (Al-Emran et al., 2018).

## CHAPTER ONE: INTRODUCTION

### 1.1 Background of the Study

Knowledge management (KM) has been adopted in most organizations due to its importance in promoting employees' knowledge. Sampaio, Sousa, and Dionísio (2019) affirmed that knowledge has contributed a significant role in organizations by promoting value creation. In recent years, knowledge management and knowledge management processes have attracted considerable interest from organizations and researchers in various disciplines. Most organizations have realized the importance of knowledge management in achieving organizational objectives. Knowledge management refers to the process of sharing and promoting employees' knowledge to enhance productivity and efficacy (Abubakar, Elrehail, Alatailat, & Elçi, 2019, p.104).

Barley, Treem, and Kuhn (2018) reiterated that knowledge management allows organizations to harness knowledge, which is a valuable asset for an organization. Knowledge management creates competitiveness in organizations (Di Vaio, Palladino, Pezzi, & Kalisz, 2021). The study argued that companies that deploy knowledge management gain a competitive advantage as the workforce shares the best organizational practices, which reduces the business processing time. The reduction of business processing time enhances customer response time creating value for the customers. Value creation for the customers promotes customer satisfaction, increasing organizational performance (Malik & Ahsan, 2019). Interestingly, Hujala and Laihonon (2021) added that knowledge management is indispensable in organizations as it promotes an organizational culture that improves business efficiency and promotes employee happiness.

Employee satisfaction has a positive impact on organizational commitment, which impacts business performance positively. Mullei, Misuko, and Misuko (2020) contended that the utilization

of knowledge improves organizational performance. Organizational managers are saddled with promoting adequate knowledge management to achieve company goals. Al-Emran, Mezhuyev, Kamaludin, and Shaalan (2018) affirmed that knowledge management promotes decision-making ability in organizations. The study further stated that knowledge management ensures that a workforce is equipped with organizational information, enabling them to make informed decisions that boost a company's performance. Effective knowledge management in organizations results in enhanced innovation (Mardani, Nikoosokhan, Moradi, & Doustar, 2018). According to the authors, sharing information among a workforce allows them to leverage organizational information from other teams. As such, the workforce uses the gathered information to develop innovative ideas that help the company to meet its desired goals.

Akuku, Waema, Oboko, and Brown (2021) stated that knowledge management creates value to achieve a company's tactical and strategic requirements. Knowledge management is utilized in strategic and tactical planning (Areed, Salloum, & Shaalan, 2020). Strategic planning involves designing organizational activities that strengthen employees and stakeholders to work toward the achievement of organizational goals. Tactical planning involves the division of a company's long-term goals into small-term goals. As such, knowledge management can be used to train a workforce on new knowledge and techniques, which can be used in developing strategic and tactical plans to achieve the organization's goals.

Most telecommunication companies globally face knowledge management challenges (Yen, Shatta, & Ahmed, 2021). The telecommunications industry is highly competitive, but some companies have failed to succeed due to the failure to incorporate an organization's background knowledge. It is imperative for organizations to build a competitive advantage by incorporating knowledge management processes. In Africa, there is scanty literature on knowledge management

in telecommunication companies. Ali (2015) affirmed that most organizations in Somalia face dismal performance due to the lack of deploying knowledge management practices.

### **1.1.1 Knowledge Management Processes**

The knowledge management process is critical in knowledge sharing (Syed et al., 2021, p.1). The knowledge management process involves how organizations manage and utilize their knowledge (Ayatollahi & Zeraatkar, 2019). Syed et al. (2021) outlined the knowledge management processes, which include acquisition, storage, distribution, and use. The study further demonstrated that the deployment of knowledge management processes improves organizational competencies.

Knowledge acquisition refers to the gaining of knowledge about new products, services, and innovations offered by market competitors (Syed et al., 2021). This knowledge is acquired from the market competitors as raw information, and converted into knowledge, which helps a company deploy this knowledge to solve any business-related issue and enhance business performance. Collecting accurate raw information is critical as it will ensure that the right knowledge is incorporated into the organization to solve business-related solutions.

Knowledge storage refers to the storage of existing information in the repository (Syed et al., 2021). A knowledge repository is used to store the current information in a computer database. The stored knowledge can be utilized in the future, and more knowledge can be added to improve organizational knowledge.

Knowledge distribution refers to access to knowledge by the company's workforce (Syed et al., 2021). Organizational knowledge is shared with all employees through processes such as presentations, emails, and speeches. Technology is important for the distribution of knowledge in

the entire organization. Knowledge distribution to all the organizational employees promotes organizational memory. According to Mullei et al. (2020, p.8), knowledge sharing is essential in organizations as it results in improved operations, productivity, and returns.

Knowledge use refers to the utilization of organizational knowledge (Syed et al., 2021). The knowledge is used to perform organizational tasks, improve business processes, and make decisions. Knowledge use occurs in two processes: direction and routine. Direction refers to advice from an employee who possesses the knowledge to another employee without knowledge. The employee advises another employee without knowledge transfer. Routine is the knowledge utilization in processes and products.

### **1.1.2 Telecommunications Companies in Kenya**

The telecommunications industry in Kenya has proliferated since 2018 due to the growth of the digital economy (Business Wire, 2019). The Communications Authority of Kenya (2018) stated that the Kenyan telecommunication industry is growing rapidly; therefore, it is a significant contributor to the economic growth in the country. The report by the Communications Authority of Kenya further stated that digital advancement in Kenya would accelerate the rapid growth of the telecommunication industry in Kenya. A report published by Research and Markets (2020) revealed that the telecommunications industry in Kenya had experienced tremendous growth due to the growth in mobile telephony, the digital economy, and internet penetration. There are several companies in the telecommunication industry, including Safaricom Limited, Airtel Kenya, and Telkom Kenya. These telecommunication companies offer the following services to their subscribers: voice, data, messaging, and fixed broadband.

The studies discussed above on knowledge management reveal that knowledge management is an imperative asset in companies as it enhances organizational practices and

decision-making capabilities. The studies further stated that knowledge management results in the improvement of employees' performance, resulting in improved organizational performance. It was also established that knowledge management enables organizations to achieve a competitive advantage, increasing their performance. Knowledge management also allows employees to utilize organizational resources, promoting organizational competitiveness. Therefore, it can be argued that knowledge management is crucial in organizations as it results in improved employee and organizational performance.

The literature further stated that the telecommunications industry in Kenya is growing rapidly, and it will experience exponential growth in the coming years. The telecom industry in Kenya is competitive, and the industry players should deploy knowledge management processes to achieve organizational performance and gain a competitive advantage in the industry. Therefore, these studies present a clear direction on the impact of deploying knowledge management in an organization. The researcher in the current study was motivated to study and unearth the effect of knowledge management processes on the performance of telecommunication companies in Kenya.

## **1.2 Problem Statement**

Unfortunately, the Kenyan telecommunications industry has underexplored the benefits of knowledge management. The study further stated that any attempt to implement knowledge management initiatives has been sabotaged by the top management. The lack of adoption of knowledge management in the telecommunication industry has caused telecommunication companies not to achieve optimal performance (Chesula & Kilika, 2020). Mugo (2020) asserted that the telecommunication industry in Kenya is facing the threat of new entrants in the market. The author argued that the existing firms in the telecommunications industry had faced stiff competition from the leading telecommunication company as they have not adopted knowledge

management processes. Mugo and Macharia (2020) suggested that companies in the telecommunication industry should implement knowledge management strategies as it allows them to strategize on methods to mitigate their customers from moving from one Telecommunication Company to the other. The studies suggested that implementing knowledge management in their organizations will promote product differentiation, product innovation, and process innovation. Therefore, the telecommunication industry's lack of knowledge of management processes has caused one company to dominate the industry. A report by Reuters (2017) revealed that the main problem facing the telecommunications industry in Kenya is unfair competition. This problem has stalled the industry, despite it being the main contributor to the government's tax revenue.

Therefore, according to the researcher's knowledge, no study has been conducted to address the effect of knowledge management on the performance of telecommunication companies in Kenya. It is critical for telecommunication companies to implement knowledge management. Previous studies have only examined knowledge management generally, but they have not given a holistic view of the knowledge management processes and their effect on telecommunication companies' performance. To bridge this research gap, the researcher in the present study conducted the present study to determine the effect of knowledge management processes on the performance of telecommunication companies in Kenya.

### **1.3 Main Objective**

This study's main objective was to establish the effect of knowledge management processes on the performance of telecommunication companies in Kenya.

### **1.4 Specific Objectives**

This study's specific objectives are:

1. To establish the effect of knowledge acquisition on the performance of telecommunication companies in Kenya.
2. To examine the effect of knowledge storage on the performance of telecommunication companies in Kenya.
3. To determine the effect of knowledge dissemination on the performance of telecommunication companies in Kenya.
4. To assess the effect of knowledge utilization on the performance of telecommunication companies in Kenya.

### **1.5 Research Questions**

The following specific research questions guided this study:

1. What is the effect of knowledge acquisition on the performance of telecommunication companies in Kenya?
2. What is the effect of knowledge storage on the performance of telecommunication companies in Kenya?
3. What is the effect of knowledge distribution on the performance of telecommunication companies in Kenya?

4. What is the effect of knowledge use on the performance of telecommunication companies in Kenya?

## **1.6 Justification of the Study**

Knowledge management processes promote decision-making abilities in organizations (Martins et al., 2019). Knowledge management allows the workforce to exchange organizational information; therefore, they can make informed decisions that promote organizational success. According to Oktari et al. (2020), knowledge management is critical as it reduces employee attrition and promotes customer satisfaction because customers are happy due to organizational best practices. The study also stated that organizations are realizing the importance of the knowledge management process as it promotes competitiveness and business growth.

Arguably, it is critical for telecommunication companies in Kenya to deploy a knowledge management process to promote customer satisfaction and reduce employee attrition. This study's results will not only benefit the telecommunication industry in Kenya but will also give valuable insights to other organizations on the benefits of deploying knowledge management processes. For this reason, it is necessary to conduct this study to determine the effect of knowledge management processes on the performance of telecommunication companies in Kenya.

## **1.7 Significance of the Study**

The findings of this study will be valuable to practitioners, scholars and researchers, and policymakers.

### **1.7.1 Practitioners**

This study's findings will guide telecommunication companies on the benefits of knowledge management processes. Telecommunication companies will realize that knowledge

management is a valuable asset in organizations as it helps them to strategize methods of creating new ideas and developing new ideas. The study will also inform telecommunication companies on knowledge management processes, such as knowledge acquisition, knowledge storage, knowledge distribution, and knowledge use.

### **1.7.2 Scholars and Researchers**

The results of this study will add to the existing body of knowledge on knowledge management processes. This study's results will also add to the literature on various knowledge management processes, such as knowledge acquisition, knowledge storage, knowledge distribution, and knowledge use. Therefore, any scholar or researcher conducting research on a similar topic will get valuable data and insights from the present study.

Scholars and researchers may also use this study's findings to establish a research gap. For instance, this study will be conducted in telecommunication companies in Kenya. Therefore, scholars and researchers may use this study's findings to find a research gap and conduct a study to bridge the research gap.

### **1.7.3 Policymakers**

This study's findings will be used by policymakers, such as The Communications Authority of Kenya and the Ministry Of Information, Communications, and Telecommunication in Kenya. These institutions will understand the relevance of deploying knowledge management processes in the telecommunication industry, which will increase the performance of the companies.

The findings will also be relevant to the Communications Authority of Kenya as it will enforce the various knowledge management processes in the telecommunications industry. The

Authority may set guidelines that will ensure the smooth implementation of knowledge management processes. The guidelines will ensure that all the telecommunication companies in Kenya perform optimally and eliminate market dominance.

### **1.8 Scope of the Study**

The study was limited to investigating the effect of knowledge management processes on the performance of telecommunication companies in Kenya. The study's objectives were able to determine the effect of knowledge acquisition, knowledge storage, knowledge distribution, and knowledge use in telecommunication companies in Kenya. The study did not include other companies in Kenya. The study was conducted through a survey from February to March 2022. The study was limited to selected employees from the three main telecommunication companies in Kenya: Safaricom Limited, Airtel Kenya, and Telekom Kenya.

## **CHAPTER TWO: LITERATURE REVIEW**

### **2.1 Introduction**

This chapter reviewed the extant literature concerning the effect of knowledge management processes on the performance of telecommunication companies in Kenya. This chapter reviewed several sections, including the theoretical review, empirical literature, conceptual framework, and literature review summary. The researcher adopted a systematic literature review. Ruoslahti and Trent (2020) proposed that systematic literature reviews should be deployed to identify and appraise research and answer a study's research question. The authors further stated that a systematic literature review conducts rigorous research and uses transparent methods to appraise and summarize research to gather unbiased evidence. Therefore, the researcher in the present study will adopt a systematic literature review to answer this study's research question. Furthermore, the researcher adopted a systematic literature review as it allows a comprehensive review of research to obtain adequate and relevant data on organizational knowledge management.

### **2.2 Theoretical Review**

This section reviewed theoretical foundations, and the researcher explained how the theories relate to the present study. This study was grounded on two theories: organizational learning theory, organizational knowledge creation theory, knowledge-based theory, and resource-based view.

#### **2.2.1 Organizational Learning Theory**

The organizational learning theory was originally developed by Argyris and Schon (1996). The theory suggests that organizational learning occurs when errors are detected and corrected. According to the authors, when employees make errors when performing organizational duties,

they learn from their mistakes. After making their mistakes, they investigate why the errors occurred. When the cause of the error is identified, employees ensure that they do not repeat that error. As such, they correct their mistakes and avoid them in the future, and they learn from these occurrences. The process of learning from mistakes is known as organizational learning. The theory further posited that organizational learning occurs through the development, retainment, and transfer of organizational knowledge among organizational employees and managers (Hermelingmeier & Wirth, 2021). Furthermore, the authors identified the various types of organizational learning, including single-loop learning, double-loop learning, and deutero-learning.

Single-loop learning occurs when the organization modifies an organizational strategy due to an error correction. Some of the error corrections that may force organizations to modify their strategies include decreased sales, poor organizational performance, and reduced profitability. Basten and Haamann (2018) added that single-loop learning identifies organizational problems and compares them with organizational values. Afterward, an adequate solution is developed. The authors further stated that single-loop learning changes the organizational strategies or assumptions; however, it ensures that the organizational values are unchanged. Therefore, organizational defects are corrected to avoid future defects.

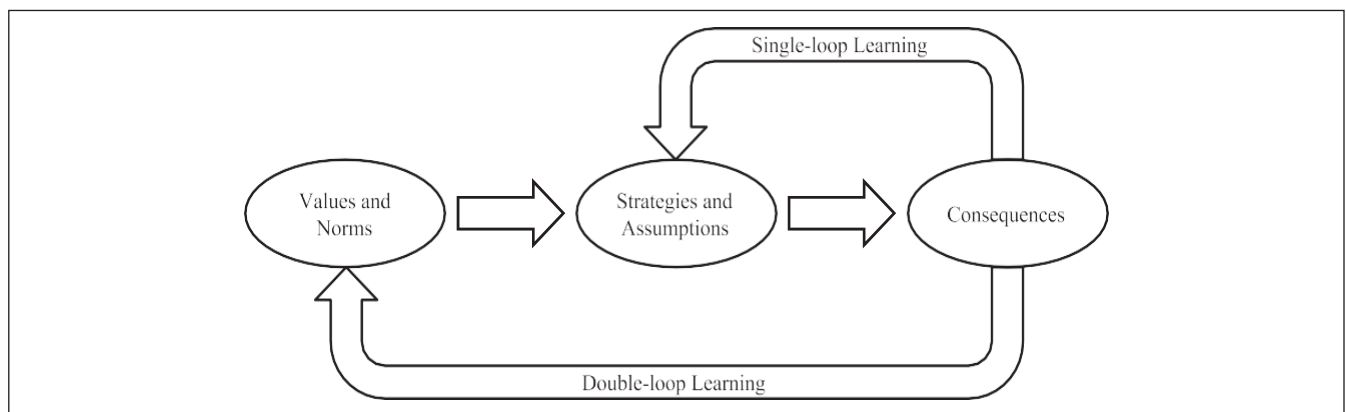
Double-loop learning changes an organization's current theory. Organization strategies and assumptions are modified to promote a better organizational environment. For instance, the organizational managers could modify the marketing strategy to increase business sales and mitigate fluctuations in organizational profitability. Double-loop learning involves organizational values adaptation (Basten & Haamann, 2018). The authors further noted that different performance

requirements in an organization might cause employee conflicts. These conflicts may be caused by divergent perspectives among the employees.

Deuterolearning involves learning system improvement. The organization changes its behavioral and structural components. These crucial components are modified to determine organizational learning. The authors further noted that this type of learning gives feedback as it connects error detection and organizational values, which promote organizational performance.

Argyris and Schon (1996) further developed a model to explain single-loop learning and double-loop learning, which is explained in figure 2.1 below.

**Figure 2.1 Single-loop and double-loop learning**



**Source: Argyris and Schön (1996, p. 22).**

Organizational learning theory is relevant and applicable to the present study. It argues that organizational learning occurs through identifying errors and rectifying those areas to improve organizational performance. The theory is further relevant in the present study as it suggests that organizations should utilize their organizational knowledge effectively and efficiently to achieve organizational objectives. The organizational learning theory further argues that organizations must adapt to the constantly changing business environment. Organizational change is crucial as organizations seek to enhance survivability and promote organizational growth. The theory further argued that organizational knowledge is fundamental in organizations as it facilitates knowledge

acquisition, knowledge distribution, knowledge storage, and knowledge use. Therefore, applying the organizational learning theory in the present study will help explain how Kenyan telecommunication companies can utilize knowledge to promote organizational performance. The theory is further relevant in the present study as it will help determine the effect of knowledge acquisition, knowledge distribution, knowledge storage, and knowledge use in promoting organizational performance in Kenyan telecommunication companies.

### **2.2.2 Organizational Knowledge Creation Theory**

The knowledge creation theory was created by Nonaka and Takeuchi (1995), who stated that organizational knowledge is created through the interaction of employees. The theory of organizational knowledge creation hypothesizes that organizational knowledge is created when there is a constant dialogue between explicit knowledge and tacit knowledge (Basten & Haamann, 2018). Explicit knowledge refers to organizational knowledge communicated in language, such as documents. Explicit knowledge can be obtained during data processing, data organization, and data structuring. Tacit knowledge refers to the knowledge gained by employees through their previous and current jobs. Tacit knowledge also includes the personal knowledge gathered by employees through technical skills, and this knowledge affects their perception of how they view the world around them. Di Vaio, Palladino, Pezzi, and Kalisz (2021) added that tacit knowledge includes the skills and experiences of an employee. Tacit knowledge is gained after acquiring various habits and behaviours that are learnt after a certain period. Furthermore, the authors noted that it is critical in an organization, as it accounts for 80% of the total organizational knowledge. Notably, the authors noted that tacit knowledge usually grows among individual employees after acquiring adequate experience in other job roles. It is challenging to transfer tacit knowledge from one employee to another as it is based on individual experience with specific job roles.

The organizational knowledge creation theory classified organizational knowledge into several phases, including socialization, externalization, internalization, and combination (Castaneda, Manrique, & Cuellar, 2018). Socialization refers to tacit knowledge transfer with other employees. For example, tacit knowledge might be shared between an experienced employee and a trainee. The experienced employee could share organizational knowledge with trainees by allocating time to train them on various duties in the organization. Socialization leads to the transfer of knowledge from the experienced employee to the trainee. The transfer of knowledge from an experienced employee to a trainee leads to knowledge transfer in the organization. Externalization refers to the translation of tacit knowledge into an understandable form. Individualized knowledge is translated, and an employee uses unique techniques, including metaphors or narratives, to transfer organizational knowledge to other employees. Internalization occurs when explicit knowledge is converted to tacit knowledge. Explicit knowledge could be gathered by employees when they gather the relevant knowledge related to their specific domain. After gathering explicit knowledge, they decode and internalize the knowledge. The combination involves explicit knowledge to explicit knowledge transformation. Explicit knowledge is transformed into a complex form by recombining, sorting, and categorizing explicit knowledge. Figure 2.3 below shows the models of knowledge creation.

**Figure 2.2: Models of Knowledge Creation**

		Tacit knowledge	To	Explicit knowledge
From	Tacit knowledge	Socialization		Externalization
	Explicit knowledge	Internalization		Combination

**Source: Basten and Haamann (2018, p.4).**

The organizational knowledge creation theory is applicable in the current study as it revealed that explicit knowledge could be transmitted to other employees. The model further suggested that tacit knowledge can be shared by sharing and transferring skills through other organizational members. For instance, experienced staff can share their knowledge with inexperienced staff. Arguably, the transfer of knowledge in the organization is imperative as it stimulates innovation among employees. As such, the knowledge could be used to promote the achievement of organizational goals and objectives. Applying the knowledge creation model in the present study will offer the researcher a suitable conceptual lens to comprehend the effect of knowledge management processes on the performance of telecommunication companies in Kenya.

### **2.2.3 Knowledge-based Theory**

The knowledge-based theory states that knowledge is a fundamental resource in organizations (Pereira & Bamel, 2021). The authors argued that knowledge is the most critical resource of a firm as knowledge is socially complex, making it difficult to imitate. The uniqueness

of knowledge in a firm is a critical determinant of sustained competitive advantage, as it results in superior corporate performance. Khudair (2018) postulated that organizational knowledge could be embedded in organizational policies, the workforce, and systems. The theory further suggests that organizational learning is indispensable. According to the authors, organizational learning is crucial as it provides companies with adequate information that could be used to achieve competitiveness. Furthermore, the theory states that employee involvement can diffuse knowledge in the organization. Employees might be involved in formulating and administering the organizational objectives. As such, employees might distribute and transfer knowledge among each other by formulating and administering the organizational objectives.

Notably, organizational knowledge is triggered by some factors, such as the ever-changing business environment, constant competition in the market, and technical advancement (López-Cabarcos, Srinivasan, Göttling-Oliveira-Monteiro, & Vázquez-Rodríguez, 2019). The authors also noted that human capital in organizations is fundamental, as it promotes organizational knowledge. The authors also recommended that organizations should establish heterogeneous knowledge strategies to achieve a competitive advantage. The theory also noted that organizational knowledge should be applied in organizations. Additionally, the management should be responsible for coordinating the workforce to distribute specialized knowledge. The authors noted that knowledge is a critical tool for organizations to promote competitiveness.

The knowledge-based view theory is related and applicable to the present study as it suggests that firms can utilize organizational knowledge, tacit knowledge, and explicit knowledge to achieve competitive advantage. Firms can deploy individual and collective knowledge to create strategies that foster innovation and develop improved performance. The researcher deployed the knowledge-based view model in the present study to facilitate the development of a framework for

illuminating the role of knowledge in promoting enhanced performance for telecommunication companies in Kenya.

## **2.3 Empirical Literature**

This section reviewed the relationship between the independent variables (knowledge acquisition, knowledge storage, knowledge distribution, and knowledge use) and the dependent variable (performance).

### **2.3.1 Knowledge Acquisition and Performance**

Knowledge acquisition improves organizational performance. Thang and Tuan (2020) explained that knowledge acquisition allows organizations to add to their knowledge repository. Expanding an organization's repository helps them gather and utilize the information that promotes continuous development. The authors further agreed that continuous development in organizations is essential as they modify their business models to promote business performance. This implies that improving an organization's knowledge repository improves organizational performance. As such, organizations that focus on improving their knowledge repository equip employees with dynamic capabilities to develop innovative initiatives, which improves organizational performance. Improved business models enable businesses to develop strategic plans that identify target markets (Goni et al., 2020). Business models enable an organization to align with its business strategy, which ultimately improves the firm performance. The development of strategic plans focusing on the market result in business growth and improved business performance. According to Gatuyu and Kinyua (2020), organizations acquire knowledge for innovation. The authors argued that organizations desire and pursue knowledge to improve their business performance. Arguably, knowledge acquisition drives innovation. Innovation increases productivity, promoting business growth (Bigliardi, Ferraro, Filippelli, & Galati, 2020). The

authors reiterated that innovation ensures that organizations adjust their products and services according to the business environment, promoting business performance. Therefore, it can be argued that knowledge acquisition encourages the learning cycle in organizations. Organizational learning contributes significantly to innovation (Naqshbandi & Tabche, 2018). This implies that organizational learning allows employees to generate new and common insights. These insights are deployed to develop and transform the organization to enhance innovation. Innovation enhances organizational performance (Jaskyte, 2020). Eresia-Eke and Makore (2017) posited that knowledge acquisition is valuable in the current dynamic business environment. Specifically, knowledge acquisition is required for effective communication among various organizational departments. The authors further contended that knowledge acquisition should be promoted by encouraging employee interaction by sharing relevant knowledge and skills. This perspective implies that employee interaction promotes organizational performance. For instance, when employees interact, they communicate, grow and develop their skills and knowledge, which promotes enhanced organizational performance.

Knowledge acquisition drives business efficiency. Gao, Chai, and Liu (2018) affirmed that knowledge acquisition is vital for businesses. It helps employees gather the information that helps them run a business efficiently and mitigate business risks. Furthermore, the authors noted that knowledge acquisition further gives organizations a knowledge advantage, which gives them the necessary knowledge to implement business strategies and exploit the potential market to its maximum potential. Knowledge acquisition creates an advantage for businesses as it provides them with additional information required to advance their products and services and innovate new products and services (Kordab, Raudeliūnienė, & Meidutė-Kavaliauskienė, 2020). The authors further explained that knowledge acquisition helps an organization achieve a competitive

advantage and promote maximum outcomes. Organizations gain competitiveness by distinguishing themselves from their customers by acquiring diverse knowledge from their competitors. Competitive advantage contributes to a business charging higher prices for its goods and services, attracting more customers, and increasing brand loyalty among consumers (Wijaya & Suasih, 2020). The authors noted that increased business profitability and brand loyalty improve business performance. Knowledge acquisition allows employees to perform organizational duties effectively and make suitable business decisions (Antunes & Pinheiro, 2020). The authors explained that knowledge acquisition enables employees to make informed decisions based on the information and knowledge gathered. The knowledge gathered will help firms make the right business decisions that promote business success. Knowledge acquisition promotes organizational learning. According to Thumbi, Hannah, and Rosemarie (2020), consistent information uptake is necessary to capture and deploy information. Therefore, knowledge acquisition facilitates knowledge transfer, which is a crucial organizational strategy in creating potential information used to improve business processes in an organization. Gonzalez and Martins (2017) affirmed that knowledge acquisition is an intangible asset that contributes to continuous improvement in an organization. The authors noted that organizations gather knowledge from various sources, such as customers, suppliers, and competitors.

Customers give insightful information, such as brand preferences and their preferred products and services (Huang & Liu, 2018). For instance, the knowledge gathered from customers through customer surveys could be used to implement customer feedback on an organization's products and services. Customer satisfaction increases purchasing power and creates a stronger brand reputation, which increases business performance (Otto et al., 2019). As such, it is evident that customer satisfaction promotes improved organizational performance. Customers' knowledge

promotes product and service innovation as organizations seek to adopt and implement the customers' preferences and their preferred products and services. Additionally, customers give feedback about an organization's products and services (Migdadi, 2020). This information is stored in an organization's knowledge repository and retrieved when required. The data provided by the customers can generate useful information that can be processed and create knowledge. This information is used to improve an organization's products and services, contributing to organizational performance. Arguably, organizations can create information from customers' through feedback, suggestions, and the gathering of market-related information. Furthermore, organizations can encourage customer feedback by promoting customer relationship management. Ideally, the development of customer relationship management will allow the use of strategies that enable organizations to manage and analyze customer feedback. Companies can improve customer relationship management by enhancing communication and cooperation between the organization and the customers.

Suppliers provide knowledge to an organization. Suppliers' information includes production forecasts, production and services quality, delivery, and defects (Ojha et al., 2022). Supplier knowledge helps businesses become aware of the customers' needs. Therefore, if organizations understand their customers' preferences, they modify their products and services to promote customer satisfaction. Otto et al. (2019) argued that customer satisfaction promotes business performance. Furthermore, suppliers can also provide insightful information on business strategies that can help an organization to improve its performance. Suppliers could provide this information as they have most of their dealings with the organization and have adequate knowledge of an organization's processes. Therefore, supplier knowledge about improving an organization's products and services would improve business performance.

Competitors provide useful information in knowledge management. Firms can collect, organize, and analyze information gathered from their competitors. This information can be used to create better decisions that result in the strategizing of new business ideas. Furthermore, firms can use the data and information gathered from their competitors to gather new information from the market. Presumably, the information gathered from competitors could be used in creating appropriate business models that promote improved business performance.

Based on the literature on the effect of knowledge acquisition and performance, the literature reviewed showed that acquiring knowledge is necessary for organizational performance. Various studies (Migdadi, 2020; Ojha et al., 2022; Otto et al., 2019) showed that knowledge acquisition is necessary as organizations need to learn to produce innovative goods and services and sustain firm competitiveness. The studies proved that organizations might gather knowledge from customers, suppliers, and employees. This knowledge is stored in the knowledge repositories, and it is used to develop innovative solutions to promote competitiveness. As such, competitiveness promotes enhanced business performance. Arguably, gaining a competitive advantage promotes improved organizational performance. Therefore, based on these literature revelations, it could be argued that the adoption of knowledge acquisition in telecommunication companies in Kenya would improve their performance.

### **2.3.2 Knowledge Storage and Performance**

Effective knowledge storage allows organizations to store knowledge easily and promotes easier retrieval in case the knowledge is required (Kimaiyo, Kapkiyai, & Sang, 2015). Furthermore, the authors explained that effective knowledge allows easier retrieval, reducing the costs associated with knowledge retrieval. Therefore, reduced costs help a company save resources and channel them to improve other areas in an organization, resulting in improved performance.

Henao-García, Lozada, and Arias-Pérez (2020) affirmed that knowledge storage saves organizational resources. Furthermore, the authors asserted that knowledge storage improves employee performance. Knowledge storage allows the storage of information with ease. As such, any employee who needs any information at any specific time can access the information without wasting time. Time reduction in retrieving knowledge allows employees to retrieve knowledge when they need it. Knowledge retrieval at the appropriate time reduces the time spent by employees to search and retrieve coded knowledge. This reduction in time promotes efficacy among employees, improving their performance. Improved employee performance helps companies to reach their objectives, leading to enhanced business performance (Paais & Pattiruhu, 2020). Balasubramanian, Al-Ahbabi, and Sreejith (2019) added that knowledge storage reduces wasted time. An organization spends a lot of resources acquiring knowledge. For instance, organizations might use most of their revenue to train employees to gain knowledge. This spending increases their expenses, reducing the business's profitability. However, knowledge storage helps organizations utilize the already existing knowledge to improve business processes and optimize performance. Mihajlović and Apostolovska (2019) asserted that knowledge storage allows employees to find information easily, therefore, boosting their productivity. Knowledge storage improves employee productivity as employees spend less time searching for information as it can be retrieved easily from the knowledge repositories. Improved productivity improves employee capacity, which improves business performance (Grimani, Aboagye, & Kwak, 2019). These assertions by these authors prove that knowledge storage promotes cost savings as employees save time searching for the organizational knowledge needed to improve business performance. Furthermore, it is evident that knowledge storage improves employees' productivity because they

do not waste time searching for knowledge, hence, increasing their productivity. As such, based on these assertions, it is undeniable that knowledge storage improves business performance.

Meissner, Müller, Hermann, and Metternich (2018) linked knowledge storage with employee engagement. The authors claimed that knowledge storage results in retaining organizational rules and beliefs. Furthermore, this knowledge can be stored and accessible to the workforce. The availability of this knowledge results in employee interaction and employee engagement. Employee engagement improves organizational performance, resulting in less absenteeism and promoting job satisfaction (Motyka, 2018). The authors claimed that employee job satisfaction is vital as it helps employees to contribute quality work. Furthermore, they handle and resolve all customers' queries amicably, resulting in customer satisfaction. Satisfied employees also ensure they perform their organizational roles effectively, creating competitiveness in the market. Arguably, competitiveness promotes organizational performance.

Gonzalez and Martins (2017) confirmed that knowledge storage allows information sharing within the organization. The authors further explained that knowledge is stored to allow and facilitate users. Knowledge storage allows facilitation, leading to integration and collaboration. Ideally, collaboration leads to knowledge collaboration, contributing to the modification and integration of knowledge. Knowledge modification and integration contribute to employee collaboration; therefore, employees collaborate toward working on similar organizational goals and objectives. Sharma (2021) noted that employee collaboration results in increased creativity. There is increased creativity due to increased flexibility, resulting in increased innovations and business improvement. The author also noted that employee collaboration results in increased productivity. Productivity increases because knowledge is easily accessible; therefore, the workforce becomes more efficient and productive. When the workforce becomes productive,

the quality of work produced improves, improving the firm's performance. Ouriques, Wnuk, Gorschek, and Svensson (2019) affirmed that knowledge storage is necessary, particularly storing employees' knowledge. The authors explained that storing employees' knowledge helps firms to become consistent in business success. Therefore, the firm informs its workforce of past strategies used to achieve organizational performance. The study further suggested that knowledge storage could inform the adoption of new business strategies. For instance, organizations could use the knowledge of new business strategies to create innovative products and services.

Knowledge storage promotes a collective workforce. According to Wang and Meng (2019), firms promoting knowledge storage allow sharing of information that promotes a collective workforce. Arguably, sharing information among a workforce encourages them to learn and develop their organizational capabilities, leading to improved performance. Knowledge storage reduces work duplication. A study by Sanguankaew and Ractham (2019) revealed that storing knowledge reduces duplication of work as previous knowledge cannot be stored. Furthermore, the study noted that reducing work duplication reduces waste and improves firm performance. Organizations store knowledge for later use (Zaim et al., 2018). Knowledge storage is requisite in organizations because it enables them to improve efficiency. For instance, organizations could create a culture of storing knowledge in the organization. Arguably, a culture of knowledge storage would improve efficiency because the knowledge is accessible to the entire organization, making knowledge retrieval easy. When knowledge is easily accessible, it makes it easier to retrieve it and use it to improve business processes, hence, enhancing business performance (Oliveira et al., 2021). Antunes and Pinheiro (2020) noted that knowledge storage is essential in business because employees can store knowledge and inform employees what business strategies have been successful in the past. Furthermore, stored knowledge further informs them of failed business

strategies. As such, employees could use past successful business strategies in the knowledge repositories to promote innovativeness and improve business performance.

The literature on the effect of knowledge storage on performance revealed that knowledge storage leads to easier knowledge retrieval. Easier retrieval promotes knowledge sharing among the workforce. The literature further noted that knowledge storage allows sharing of information, which results in a collaborative workforce. A collaborative workforce works towards achieving business success and promoting enhanced organizational performance. Ideally, several scholars (Antunes and Pinheiro (2020; Sanguankaew and Ractham, 2019; Oliveira et al., 2021; Zaim et al., 2018) agreed that knowledge repositories have enabled most organizations to improve their business performance by retrieving organizational information that enabled them to achieve improved business performance. Organizations might also use the stored information to make strategic decisions and improve their performance. Therefore, the literature on knowledge storage affirmed that knowledge storage has a positive and significant effect on performance. Ideally, it is arguable that telecommunication companies in Kenya could use stored knowledge and retrieve useful information to improve business efficiency and business performance.

### **2.3.3 Knowledge Distribution and Performance**

Knowledge distribution promotes improved organizational performance. A study by Kashari and Taherib (2019) reported that knowledge distribution allows a company to gain a competitive advantage. The authors explained that knowledge distribution creates new knowledge that promotes improved business processes and technology. The improvement of business processes and technology improves productivity. Increased productivity allows businesses to generate more output from the input of minimal resources (Bakator, Petrović, Borić, & Đalić, 2019). Therefore, when businesses generate more output, it saves raw materials and labour,

resulting in cost reduction. The study argued that cost reduction improves business profitability and long-term success. Another study by Ahmad and Karim (2020) revealed that knowledge distribution promotes employee engagement. The authors explained that knowledge distribution allows employees to discuss various organizational practices, such as know-what and know-how. The discussion of these practices allows the employees to express creative ideas that lead to innovation. Innovative ideas lead to organizational growth and the development of strategies that lead to sustainable development. The authors further argued that business growth and sustainable development result in enhanced business performance. This perspective is interesting as it shows that knowledge distribution promotes innovation. For instance, when employees share knowledge concerning the organizational process, some employees might suggest creative ideas on how to leverage business performance. Therefore, based on these propositions, it could be argued that knowledge distribution promotes business performance.

Notably, knowledge distribution promotes organizational capabilities. Al Mansoori, Salloum, and Shaalan (2020) affirmed that knowledge distribution enhances employee collaboration. Knowledge distribution allows the most experienced employees to share their knowledge with the less experienced employees. Therefore, this distribution of knowledge creates spaces that encourage the growth and sharing of organizational knowledge. Arguably, increased organizational distribution promotes organizational learning, leading to long-term organizational success. Cassia, Costa, Da Silva, and De Oliveira Neto (2020) found that knowledge distribution supports the conversion of knowledge infrastructure to organizational capabilities. For instance, knowledge distribution results in the utilization and advancement of organizational culture and technology, which are used in executing the organization's business strategy and customer

satisfaction. Arguably, the achievement of a business strategy and customer satisfaction promotes enhanced business performance.

Knowledge distribution promotes improved organizational leadership. Mishra et al. (2019) demonstrated that knowledge distribution helps organizational leaders facilitate knowledge distribution in an organization. According to the authors, organizational leadership is responsible for leading and facilitating the process of knowledge distribution. Organizational leaders empower employees by encouraging them to participate in the knowledge distribution process. Islam, Hasan, and Jasimuddin (2018) reiterated that effective organizational leaders encourage employees to be open and creative and participate in the knowledge distribution process. Furthermore, the authors reiterated that encouraging and facilitating employees to participate in the knowledge distribution process contributes to positive outcomes, including employee motivation and satisfaction. Employee motivation and employee satisfaction are positively correlated to organizational performance. Knowledge distribution cultivates knowledge utilization (Ouakouak & Ouedraogo, 2018). The authors argued that organizations promote knowledge distribution with an expectation that the knowledge will be used conceptually. For instance, organizational knowledge could be utilized to enlighten employees to acquire new perspectives concerning a business. Consequently, new perspectives might result in new attitudes, which motivate employees to work towards achieving organizational goals. As such, these propositions affirm that knowledge distribution promotes performance.

Paais and Pattiruhu (2020) established that employee motivation helps employees to feel appreciated. When employees feel appreciated, they work with enthusiasm, increasing productivity. The authors noted that productive employees put their maximum effort into their job and aim to achieve organizational goals. The study also noted that employees could not only

work, but they have the willingness to work. As such, when employees have the willingness to work, they contribute to increased work output and increased organizational performance. Another study affirmed the importance of effective organizational leadership, as demonstrated by the authors mentioned above. Putra and Gupron (2020) contended that effective organizational leaders improve employee performance in the knowledge distribution process. For instance, some employees may have negative perceptions about distributing knowledge to their fellow employees; however, organizational leaders encourage employees to change their perceptions of knowledge distribution. Therefore, employees are motivated to deliver their job effectively to promote organizational performance.

Knowledge distribution promotes employee communication. Kempton and Sarala (2021) asserted that knowledge distribution allows communication among employees and managers. Employee communication is essential as it will enable the formulation of strategies that result in enhanced organizational performance. Atatsi, Stoffers, and Kil (2019) found that knowledge distribution leads to employee communication, promoting increased morale. Furthermore, the authors noted that increased employee morale is related to employee commitment. Employees become committed as they have found motivating factors that encourage them to promote the organization's performance. The study also found that employee communication is positively and significantly related to employee commitment. Arguably, committed employees work collaboratively to achieve organizational objectives.

The literature on the effect of knowledge distribution on performance demonstrated that knowledge distribution promotes employee engagement, employee communication, employee commitment, and employee morale. The studies further claimed that employee engagement, employee communication, commitment, and morale result in job satisfaction and job involvement.

As such, employees are engaged in the organization, and they work towards the achievement of the company's goals. Various studies (Atatsi, Stoffers, and Kil, 2019; Kempton and Sarala, 2021; Putra and Gupron, 2020) contended that knowledge distribution allows employees to create ideas and develop innovative ideas that organizations use to innovate and improve performance. Therefore, the studies concluded that knowledge distribution positively and significantly affects performance.

#### **2.3.4 Knowledge Use and Performance**

Employees apply knowledge of organizational products and services. Alsabbagh and Khalil (2017) contended that employees deploy knowledge in making critical decisions in the organization that promotes business continuity. The authors further noted that organizations should use the knowledge they have gathered to create value. Therefore, knowledge use of the knowledge gathered through the various knowledge management processes helps achieve organizational goals. Applying knowledge gathered from different sources is essential in creating guidelines and blueprints to streamline organizational processes (Mishra & Upadhyay, 2021). Knowledge is used to streamline business processes, improving output and quality. Arguably, the improvement of output and quality results in improved organizational performance. The authors further noted that knowledge use might be accomplished through knowledge integration and innovation using the existing knowledge. Arnott and Lemos (2021) emphasized that knowledge users collaborate to establish whether they can produce or co-produce actionable knowledge. The authors further claimed that knowledge application occurs when employees utilize the available organizational knowledge to perform tasks using routines and directions. Knowledge application in routines occurs when knowledge is fixed in organizational rules and procures. Direction occurs when an employee needs specific knowledge about performing a certain task in the organization. However,

the employee possessing the knowledge advises the other employee without transferring the knowledge to them. Knowledge use allows feedback generation (Talab, Scholten, & Beers, 2018). Organizations use this feedback to take corrective measures to improve organizational processes. For instance, negative feedback suggests that certain business strategies are not effective in promoting organizational performance. Therefore, corrective measures are taken to improve business performance. Levallet and Chan (2019) noted that knowledge use is useful because it allows the evaluation of outcomes. As such, if the outcomes have a negative impact on performance, necessary measures are taken to improve performance.

Abubakar, Elrehail, Alatailat, and Elçi (2019) found that knowledge use promotes organizational agility. The authors argued that utilizing organizational knowledge benefits organizations as they use the knowledge to develop strategies that can be used to adapt to the external business environment and any digital disruptions. Hujala and Laihonen (2021) reiterated that knowledge use leads to quick decision-making and promotes quick problem-solving. The authors claimed that organizations utilize current and existing knowledge to make decisions that affect the performance of the business. Therefore, if there are any issues, they can be solved amicably.

Several studies (Hujala and Laihonen, 2021; Levallet and Chan, 2019) on the effect of knowledge use on organizational performance showed that knowledge use increases organizational agility and promotes faster decision-making and quicker problem-solving. The studies further revealed that knowledge use allows the evaluation of outcomes, and corrective measures are taken to improve performance. The authors further noted that organizations combine the existing and the current knowledge to develop a competitive advantage and realize organizational performance. The studies demonstrated that effective use of knowledge enhances

employee performance, improving organizational performance. Therefore, the studies collectively claimed that knowledge uses significantly and positively affects organizational performance.

#### **2.4 Research Gap**

There were notable research gaps in the literature review. Table 2.1 below presents a summary of the knowledge gaps

**Table 2.1: Summary of the Research Gaps**

<b>Authors</b>	<b>Title</b>	<b>Methodology</b>	<b>Findings</b>	<b>Knowledge Gap</b>
Khaemba (2013)	Factors affecting knowledge management implementation in telecommunication industry: A case study of Safaricom Limited.	Descriptive research	The study established that information technology, support by the top management, and change acceptance affect the implementation of knowledge management.	The study only focused on Safaricom Limited; therefore, the findings were limited to one telecommunication company. The findings of knowledge management application in one telecommunication company cannot be applicable to other companies.
Okwemba (2018)	Influence of knowledge management capabilities on performance of telecommunication	Descriptive research	Knowledge management capabilities have a positive and a significant effect on performance of mobile	The study focused on knowledge management capabilities, but it failed to focus on knowledge management

companies in  
Kenya

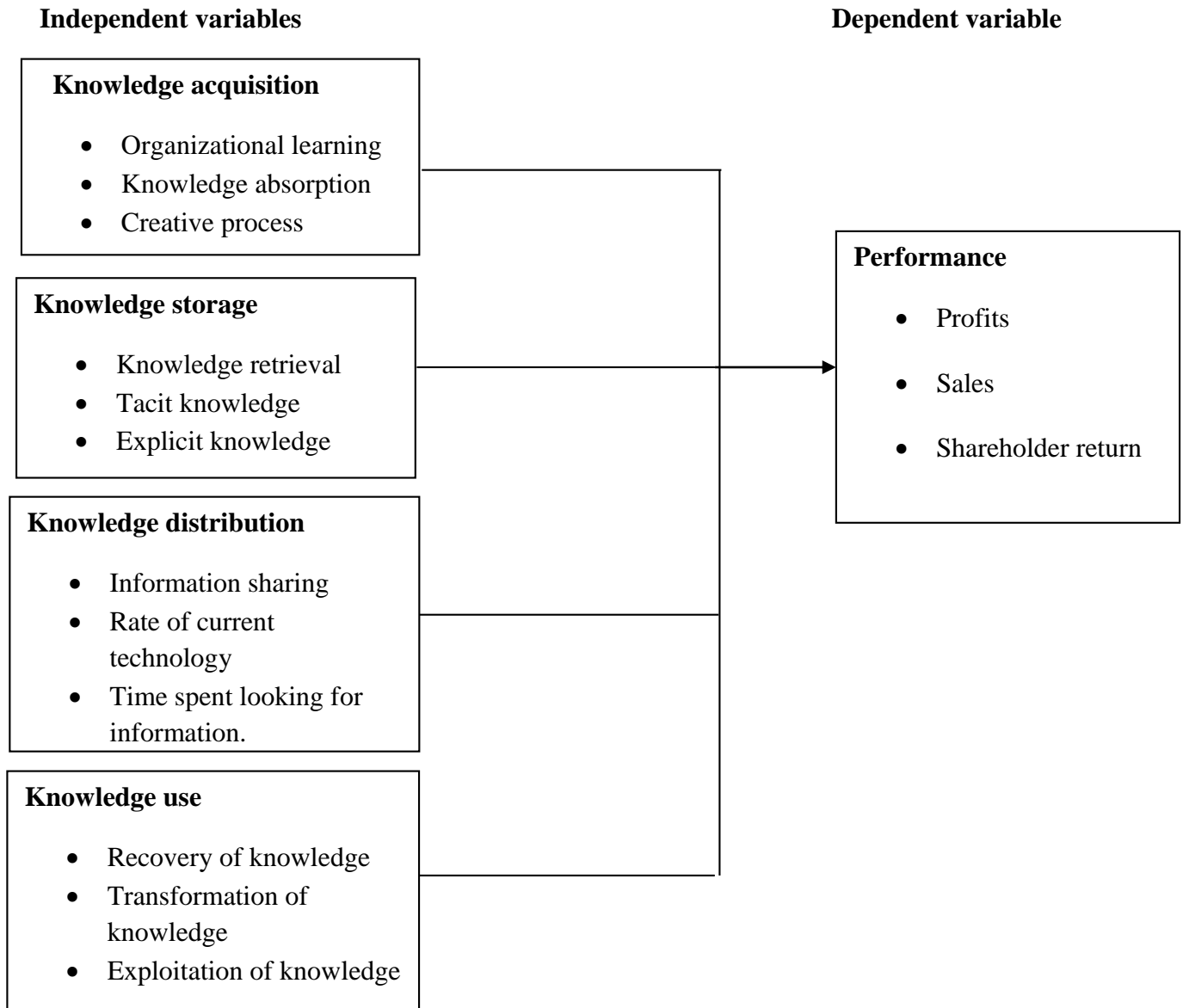
telecommunication processes.  
firms. Knowledge  
management  
capabilities  
involves continual  
mechanisms to  
create  
organizational  
knowledge, but it  
does not involve  
knowledge  
management  
processes.  
-Furthermore,  
knowledge  
management  
capabilities are  
inclined more  
towards  
knowledge  
acquisition, but  
not other  
knowledge  
management  
processes, such as  
knowledge  
application,  
distribution, and  
use.

**Source: Reviewed Empirical Studies (2022)**

## 2.5 Conceptual Framework

A conceptual framework is a diagrammatic illustration of the relationship between a study's independent variables and the dependent variables (Kivunja, 2018). The conceptual framework is shown in figure 2.3 shown below.

**Figure 2.4: Conceptual Framework**



## **2.6 Operationalization of the Study Variables**

The dependent variable in the present study is performance. The determinants of performance are the independent variables: knowledge acquisition, knowledge storage, knowledge distribution, and knowledge use.

**Table 2.2: Operationalization of Variables**

<b>Objective</b>	<b>Variable</b>	<b>Operationaliz ation</b>	<b>Indicators</b>	<b>Measurement Scale</b>
Performance	Dependent variable	Organizational performance	-Organizational learning -Knowledge absorption -Creative process	Ordinal
To determine the impact of knowledge storage on performance.	Independent variable	Knowledge repository	-Explicit knowledge -Tacit knowledge - Knowledge retrieval	Ordinal
To analyze the impact of knowledge distribution on performance.	Independent variable	Knowledge sharing	-Information sharing -Techniques -Technology	Ordinal
To establish the effect of knowledge use on performance.	Independent variable	Knowledge application	-Recovery of knowledge. -Transformation of knowledge. -Exploitation of knowledge.	Ordinal

**Source: Researcher (2022)**

## **2.7 Summary of the Literature Review**

This chapter presented a systematic literature review, which demonstrated that knowledge management in organizations is one of the most researched topics by scholars and researchers due to its critical importance in organizational performance. The review also revealed a significant positive relationship between knowledge management processes (knowledge acquisition, knowledge storage, knowledge distribution, and knowledge use) and performance.

## **CHAPTER THREE: RESEARCH METHODOLOGY**

### **3.1 Introduction**

This chapter reviewed the research methodologies that will be deployed in the current study and the data analysis methods. This chapter reviewed the following sections: research design, target population, sample and sampling techniques, instrumentation, the validity of the research instrument, reliability of the research instrument, data collection, data analysis, and ethical considerations.

### **3.2 Research Design**

The researcher adopted a descriptive research design. According to Atmowardoyo (2018), descriptive research designs are used to accurately describe the phenomenon under investigation. The author further noted that the adoption of a descriptive research design could adopt different research methods to investigate the study variables. The study deployed a descriptive research design because the researcher could manipulate the variables. A descriptive research design was also deployed in this study to accurately and systematically describe the impact of knowledge management practices in improving performance in telecommunication companies in Kenya.

### **3.3 Target Population**

According to Majid (2018), a target population is a group of people or elements with the same characteristics, and a researcher shows interest in studying them to obtain relevant data. This study's target population will be the three major telecommunication companies in Kenya: Safaricom Limited, Airtel Kenya, and Telkom Kenya. The researcher chose the three telecommunication companies because they are Kenya's major telecommunication companies. The researcher targeted 650 employees in all the organizations. This target population was adequate

because it allowed the researcher to gather the appropriate data to answer the study’s research question. The target population was based on the employees working in the human resource departments of the three telecommunication companies because they are the main leaders of knowledge management practices.

**Table 3.1 Target Population**

<b>Categories</b>	<b>Target Population</b>
Safaricom	300
Airtel Kenya	200
Telkom Kenya	150
<b>Total</b>	<b>650</b>

**Source: Researcher (2022)**

### **3.4 Sample and Sampling Techniques**

Sharma (2017) defined a sample as the number of people required to participate in a study. The researcher will adopt stratified random sampling. The author claimed that in stratified random sampling, the elements or characteristics are divided into various characteristics, such as education level or income. In the present study, stratified random sampling will be deployed. Therefore, the population will be divided into three strata, which comprised of employees in the three telecommunication companies. Disproportionate stratified sampling was deployed, where the researcher chose the population elements based on personal judgment to ensure a fair and unbiased sample.

Yamane (1967) introduced a sample size formula to calculate the sample size, using a 95% confidence level and a  $\pm 5$  margin of error.

$$n = \frac{N}{1 + N(e)^2}$$

Whereby, n denotes the sample size. N is the target population, which in this case will be the 650 listed firms. e was the margin of error at +5% (0.05) precision level.

$$n = \frac{650}{1 + 650(0.05)^2}$$

Therefore, the appropriate sample size was  $247.6 \approx 248$  participants.

### **3.5 Instrumentation**

Semi structured questionnaires were used to gather data from the study participants. The questionnaires contained two main sections: the demographic and general sections. A Likert Scale was used to measure the latent constructs in the general section. The Likert scale included a 5-point Likert scale, where 1-Strongly disagree, 2-Disagree, 3-Undecided, 4-Agree, and 5-Strongly Agree.

### **3.6 Pilot Study**

Researchers conduct a pilot study to eliminate future technicalities that may arise during the actual study. Furthermore, conducting a pilot study allows researchers to determine a study's feasibility (Ismail et al., 2017). The authors recommended that the sample of a pilot test should be 10-30% of the study's sample size. For that reason, this study's pilot test comprised  $(10 \times 248 / 100) \approx 24.8$  respondents. The pilot test was conducted two weeks prior to conducting the actual study.

### 3.7 Validity of the Research Instrument

Mohajan (2017) suggested that researchers can ensure a research instrument's validity by inquiring about the questions on the questionnaire from the supervisor or industry experts. The researcher in the present study ensured the validity of the questionnaires by asking for feedback from the supervisor and asking experts in the knowledge management industry.

### 3.8 Reliability of the Research Instrument

Cronbach's alpha was used to establish the questionnaire's reliability using the formulae below:

$$A = \frac{k}{k-1} \times [1 - \frac{\sum(S^2)}{\sum S^2 \text{sum}}]$$

Where:

$\alpha$  = Cronbach's alpha

k = Number of responses

$\sum(S^2)$  = Variance of individual items summed up

$\sum S^2 \text{sum}$  = Variance of summed-up scores

Bujang et al. (2018) recommended that Cronbach's alpha should be  $>0.7$  for the research instruments to be deemed reliable. However, a Cronbach's Alpha Score of 0.6 was still considered an acceptable level of reliability.

### 3.9 Data Collection

The researcher sought clearance to collect data from the KCA University Research Ethics Board. Furthermore, the researcher obtained a research permit from NACOSTI (National Commission for Science, Technology, and Innovations).

### **3.10 Diagnostic Tests**

Diagnostic tests were done before commencing data analysis. The following diagnostic tests were carried out: normality test, heteroscedasticity, and multicollinearity.

#### **3.10.1 Normality Test**

Normality tests are used to test data normality (Gupta et al., 2019). They include Kolmogorov–Smirnov test and the Shapiro–Wilk Test. Kolmogorov–Smirnov test is used to compare cumulative distributions among data sets. Shapiro–Wilk test is used to confirm whether a continuous variable is normally distributed. Normality tests could also be tested using QQ plots and a histogram. The study comprised of  $N > 200$ ; therefore, the Shapiro–Wilk Test might not be accurate because it is more accurate when  $N < 50$ .

#### **3.10.2 Heteroscedasticity**

Heteroscedasticity occurs when the standard deviation in a predicted variable is non-constant (Wilcox, Peterson, & McNitt-Gray, 2018). The study employed a Breusch-Pagan test to determine the presence of heteroscedasticity. The data was assumed to lack heteroscedasticity if the P-value was more than 0.05.

#### **3.10.3 Multicollinearity**

According to Ibrahim, Mohammed, and Waleed (2020), multicollinearity occurs when two or more predictor variables are positively and significantly correlated. It can be measured using the variance inflation factor (VIF) value. If the VIF value is  $\geq$ , multicollinearity is present among the variables.

### 3.11 Data Analysis

The researcher analyzed data with Statistical Package for Social Sciences (SPSS) Version 20. The researcher also assessed the relationship between the independent variables and the dependent variables statistically using a multiple regression model, which is shown below:

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

Where: Y= Performance

$\beta_0$ = Constant

$\beta_1$  to  $\beta_4$  =Coefficients

X1 = knowledge acquisition

X2= knowledge storage

X3 = knowledge distribution

X4 = knowledge use

$\varepsilon$  =Error term.

### 3.12 Ethical Considerations

The researcher informed the study participants about the study's objectives before engaging them to participate in the study.

## CHAPTER FOUR: RESULTS AND DISCUSSION

### 4.1 Introduction

This chapter discussed data analysis, findings, and a discussion of the effect of knowledge management processes on the performance of telecommunication companies in Kenya. The chapter was guided by the following objectives: to establish the effect of knowledge acquisition on the performance of telecommunication companies in Kenya, to determine the effect of knowledge storage on the performance of telecommunication companies in Kenya, to find out the effect of knowledge distribution on the performance of telecommunication companies in Kenya, and to establish the effect of knowledge use on the performance of telecommunication companies in Kenya. This chapter contained the following sections: the response rate, descriptive statistics, diagnostic test results, and a discussion of the findings.

### 4.2 Response Rate

The study targeted 248 respondents, who constituted employees that are involved in the knowledge management processes in the selected telecommunication companies. Out of the 248 respondents, 200 questionnaires were returned and duly filled with responses. The returned questionnaires constituted a response rate of  $(200/248*100) = 80.65\%$ . This response rate was adequate. Mugenda and Mugenda (2013) claimed that a response rate of 50% is adequate, a 60% response rate is good, and a 70% response rate or higher is outstanding. For this reason, the response rate in the present study was 80.65%, implying that the respondents would help the researcher in developing outstanding and feasible results on the effect of knowledge management processes on the performance of telecommunication companies in Kenya. The response rate is shown in table 4.1 below.

**Table 4.1: Response Rate**

<b>Status</b>	<b>Response Rate (Frequency)</b>	<b>Percentage (%)</b>
Responded	200	80.65
Did not respond	48	19.35
<b>Total</b>	<b>248</b>	<b>100</b>

**Source: Survey Data, (2022)**

### **4.3 Pilot Test**

#### **4.3.1 Reliability Test**

10% of the sample size was used in the pilot test, which comprised of 25 respondents ( $10/100 \times 248$ ) = 25 respondents. A coefficient of 0.7 was used to establish the questionnaire's reliability.

#### **Chronbach's Alpha**

<b>Reliability Statistics</b>	
<b>Cronbach's Alpha</b>	<b>N of Items</b>
.733	5

The total Cronbach's Alpha score for the variables was 0.733, which proved internal consistency reliability because it was  $> 0.7$  (Bujang et al., 2018). The table below shows the Cronbach's Alpha for all the questionnaire statements, which proved that most of the statements had a Cronbach's Alpha score of more than 0.7, meaning that the questionnaire statements were reliable.

**Item-Total Statistics**

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Knowledge acquisition	17.0338	1.587	.330	.780
Knowledge storage	17.1347	1.598	.485	.692
Knowledge distribution	17.0548	1.701	.583	.663
Knowledge use	16.8280	1.580	.724	.614
performance	17.0558	1.740	.492	.690

**Source: Research Data, (2022)**

The Cronbach’s Alpha for the independent variables (knowledge acquisition, knowledge storage, knowledge distribution, knowledge use), and the dependent variable (performance), revealed that most of the scores are beyond 0.7. Therefore, as Bujang et al. (2018) recommended, the questionnaire is deemed reliable, which increases this study’s reliability. According to Bujang et al. (2018), a Cronbach’s Alpha ( $\alpha$ ) score of 0.6-0.7 is an acceptable level of reliability, while a Cronbach’s Alpha ( $\alpha$ ) score of 0.8 or greater indicates a better reliability score, while the ( $\alpha$ ) score of 0.9 indicates the best reliability. Therefore, since this study’s variables have a Cronbach’s Alpha ( $\alpha$ ) score of >0.6, the study’s research instrument (questionnaire) is deemed reliable.

**4.3 Background Information of the Respondents**

**4.3.1 Gender**

Out of a total of 200 respondents, 51% of the respondents were male, while 49% were female. These findings revealed that the researcher gathered data from both genders; therefore, one gender does not overshadow the other. The findings are summarized in table 4.1 below:

**Table 4.2: Gender**

<b>Gender</b>	<b>Frequency</b>	<b>Percentage</b> (%)
Male	102	51
Female	98	49
<b>Total</b>	<b>200</b>	<b>100</b>

**Source: Survey Data, (2022)**

#### **4.3.2 Age bracket of the Respondents**

The findings concerning the age bracket revealed that 5% of the respondents are below 25 years, 16% are aged between 26-30 years, 41% are aged between 31-40 years, and 38% are aged above 40 years. Therefore, the findings concluded that most respondents were aged between 31-34 years, meaning that most of the employees in the telecommunication companies are middle-aged. The findings are presented in Table 4.3 shown below:

**Table 4.3: Age Bracket**

<b>Years</b>	<b>Frequency</b>	<b>Percentage</b> (%)
Below 25	10	5
26-30	32	16
31-34	82	41
Above 40	76	38
<b>Total</b>	<b>200</b>	<b>100</b>

**Source: Survey Data, (2022)**

### 4.3.3 Highest level of formal education

The findings relating to the highest level of formal education showed that 3% of the respondents possess a high school certificate, 21% possess a diploma, 43.5% possess a university degree, and 32.5% possess a postgraduate degree. Therefore, the findings implied that most respondents were well acquainted with knowledge management processes deployed at their organization. These findings further revealed that most employees have the prerequisite education; therefore, it was assumed that their high level of formal education enabled them to understand and answer the questionnaire appropriately. The findings are presented in Table 4.4 shown below:

**Table 4.4: The highest level of formal education**

<b>Years</b>	<b>Frequency</b>	<b>Percentage (%)</b>
High school certificate	6	3
Diploma	42	21
University degree	87	43.5
Postgraduate	65	32.5
<b>Total</b>	<b>200</b>	<b>100</b>

**Source: Survey Data, (2022)**

### 4.4 Descriptive Statistics

The study had four independent variables and one dependent variable. The independent variables included knowledge acquisition, knowledge storage, knowledge distribution, and knowledge use. The dependent variable is performance.

#### 4.4.1 Knowledge Acquisition and Performance

**Table 4.9: Knowledge Acquisition and Performance**

Statements	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Mean	Std. Dev
The organization gathers knowledge from customers, markets, and suppliers, which is used to promote organizational performance.	0%	0%	0%	33.5%	66.5%	4.67	0.47
My company adopts absorptive capabilities, such as knowledge utilization, to promote organizational performance.	6.5%	3.5%	11%	29.5%	49.5%	4.12	1.15
The organization creates knowledge and makes it available to its knowledge system to promote organizational performance.	2.5%	6%	12.5%	32%	47%	4.15	1.02
Knowledge acquisition enhances creativity in the company, promoting organizational performance.	7%	4.5%	10.5%	32.5%	45.5%	4.05	1.17
Knowledge acquisition encourages innovation, resulting in organizational performance.	0%	8%	10.5%	32%	49.5%	4.23	0.93

**Source: Research Data, (2022)**

The respondents were asked whether their organization gathers knowledge from customers, markets, and suppliers and whether it contributes to organizational performance. 66.5% of the respondents strongly agreed with this statement. The respondents were asked whether their company adopts absorptive capabilities, such as knowledge utilization, to promote organizational performance. 49.5% of the respondents strongly agreed with this statement. The respondents were asked whether their organization creates knowledge and makes it available to their knowledge system to promote organizational performance. 47% of the respondents strongly agreed with this statement. The respondents were asked whether knowledge acquisition enhances creativity in the company, promoting organizational performance. 45.5% strongly agreed with this statement. The respondents were asked whether knowledge acquisition encourages innovation, resulting in organizational performance. 49.5% of the respondents strongly agreed with this statement. The responses strongly agreed with the statements related to knowledge acquisition.

The findings in table 4.9 indicated that most of the respondents approved that knowledge acquisition has a significant impact on the performance of telecommunication companies. This was proved by the highest mean, which is 4.67, while the lowest standard deviation is 0.47. For instance, the respondents intimated that gathering knowledge from customers, markets, and suppliers promotes organizational performance, which was depicted by a mean of 4.67 and a standard deviation of 0.47. The respondents also strongly agreed that their company adopts absorptive capabilities, such as knowledge utilization, to promote organizational performance, which was proved by a high mean of 4.12 and a low standard deviation of 1.15. The respondents corresponded that their organizations create knowledge to promote organizational performance. This correspondence was shown by a high mean score of 4.15 and a low standard deviation of 1.02. These results indicated clearly that respondents strongly agreed with the statement that

knowledge creation promotes organizational performance. The respondents also indicated that knowledge acquisition enhances creativity, thereby promoting organizational performance. This was shown by a high mean of 4.05 and a standard deviation of 1.17. The findings further showed that knowledge acquisition encourages innovation among employees and promotes organizational performance. This statement was proved by a high mean score of 4.23 and a standard deviation of 0.93.

#### 4.4.2 Knowledge Storage and Performance

**Table 4.10: Knowledge Storage and Performance**

Statements	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Mean	Std. Dev
The organization stores relevant data for future use.	0%	0%	11%	38%	51%	4.4	0.68
My company has an operational knowledge retrieval process.	16%	11%	17%	34%	22%	3.35	1.36
The organization ensures the utilization of employees' tacit knowledge.	0%	5%	15%	36%	44%	4.19	0.87
Employees can easily store, access, and exchange explicit knowledge.	0%	2.5%	10%	37.5%	50%	4.35	0.76
Knowledge storage encourages organizational performance.	0%	4%	11%	24%	61%	4.42	0.84

**Source: Research Data, (2022)**

The respondents were asked whether their organization stores relevant data for future use. 51% of the respondents strongly agreed with this statement. The respondents were asked whether their company has an operational knowledge retrieval process. 34% of the respondents agreed with this statement. The organization ensures the utilization of employees' tacit knowledge. 44% of the respondents strongly agreed with this statement. The respondents were asked whether employees can easily store, access, and exchange explicit knowledge. 50% strongly agreed with this statement. The respondents were asked whether knowledge storage encourages organizational performance. 61% of the respondents strongly agreed with this statement. The responses strongly agreed with the statements related to knowledge storage.

The findings in table 4.10 depicted that most of the respondents strongly agreed that knowledge storage was implemented in their organizations and it promotes organizational performance. This agreement was depicted by high mean scores of 4.42 and 4.4, and low standard deviations of 0.68 and 0.76. The respondents agreed storing data for future use helps them mitigate data loss and promote organizational success, which was shown by a high mean of 4.4, and a standard deviation of 0.68. The respondents further claimed that they have an easy and operational knowledge retrieval process, which is shown by a mean of 3.35 and a standard deviation of 1.36. Most respondents further claimed that they utilize tacit knowledge, shown by a mean score of 4.19 and a standard deviation of 0.87. These findings further showed that most respondents agreed that employees can store, access, and exchange explicit knowledge, which was shown by a mean of 4.35, and a standard deviation of 0.76. The respondents agreed that knowledge storing promotes organizational performance, shown by a mean of 4.42, and a standard deviation of 0.84.

#### 4.4.3 Knowledge Distribution and Performance

**Table 4.11: Knowledge Distribution and Performance**

Statements	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Mean	Std. Dev
The employees share knowledge willingly.	0%	0%	0%	47.5%	52.5%	4.4	0.68
The management constantly sensitizes the employees to distribute and share knowledge amongst themselves to improve business performance.	0%	0%	0%	38%	62%	3.35	1.36
The management has deployed adequate technology to facilitate knowledge distribution.	16%	14%	19%	40.5%	10.5%	4.19	0.87
The employees have been trained in knowledge distribution techniques.	0%	5%	7.5%	36%	51.5%	4.35	0.76
It is easy for employees to distribute knowledge among their colleagues.	0%	0%	11.5%	30%	58.5%	4.42	0.84

**Source: Research Data, (2022)**

The respondents were asked whether their employees share knowledge willingly. 52.5% of the respondents strongly agreed with this statement. The respondents were asked whether the management constantly sensitizes the employees to distribute and share knowledge amongst themselves to improve business performance. 62% of the respondents strongly agreed with this statement. The respondents were asked to state whether the management has deployed adequate technology to facilitate knowledge distribution. 40.5% of the respondents agreed with this statement. The respondents were asked whether the employees had been trained in knowledge distribution techniques. 51.5% strongly agreed with this statement. The respondents were asked whether it is easy for employees to distribute knowledge among their colleagues. 58.5% of the respondents strongly agreed with this statement. The responses strongly agreed with the statements related to knowledge distribution.

The findings in table 4.11 revealed that most respondents strongly agreed that knowledge distribution was implemented in their organizations and promoted organizational performance. This agreement was depicted by high mean scores of 4.62 and 4.53 and low standard deviations of 0.49 and 0.50. The respondents agreed employees share knowledge willingly, which was shown by a high mean of 4.53 and a standard deviation of 0.50. The respondents further claimed that the company's management encourages them to distribute knowledge to improve business performance. This statement had a mean score of 4.62 and a standard deviation of 0.49. The respondents also strongly agreed that their organization had deployed comprehensive technology to facilitate knowledge distribution, which was proved by a mean score of 3.16 and a standard deviation of 1.26. The respondents further stated that they have the prerequisite training needed in knowledge distribution, which was proved by a high mean of 4.34 and a standard deviation of

0.82. The respondents strongly agreed that the process of knowledge distribution is easy. This statement had a high mean score of 4.47 and a standard deviation of 0.69.

#### 4.4.4 Knowledge Use and Performance

**Table 4.12: Knowledge Use and Performance**

Statements	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Mean	Std. Dev
	Disagree	Agree					
Employees use organizational knowledge to improve organizational performance.	0.5%	1%	1%	45%	52.5%	4.4	0.68
Employees exploit the available knowledge and apply it in various organizational processes.	0%	0.5%	2%	39.5%	58%	3.35	1.36
Employees acquire and modify information to use in the organization.	14%	14%	19%	41.5%	11.5%	4.19	0.87
The management uses knowledge to inform business decisions.	0%	5%	7.5%	39.5%	48%	4.35	0.76
Knowledge application promotes innovation and the development of new products.	0%	1%	11.5%	28%	59.5%	4.42	0.84

**Source: Research Data, (2022)**

The respondents were asked whether employees use organizational knowledge to improve organizational performance. 52.5% of the respondents strongly agreed with this statement. The respondents were asked whether employees exploit the available knowledge and apply it in various organizational processes. 58% of the respondents strongly agreed with this statement. The respondents were asked to state whether employees acquire and modify information to use in the organization. 41.5% of the respondents agreed with this statement. The respondents were asked whether the management uses knowledge to inform business decisions. 48% strongly agreed with this statement. The respondents were asked whether it is easy for knowledge application promotes innovation and the development of new products. 59.5% of the respondents strongly agreed with this statement. The responses strongly agreed with the statements related to knowledge use.

The findings in table 4.12 revealed that the respondents strongly agreed that knowledge use significantly contributed to organizational performance in telecommunication companies in Kenya. The respondents further stated that they utilize organizational knowledge to improve organizational performance, and this statement was shown with a mean of 4.48 and a standard deviation of 0.63. The respondents also strongly agreed that employees exploit the available knowledge and apply it in various organizational processes to improve the organizational process. This statement was depicted by a high mean score of 4.55 and a standard deviation of 0.56. The respondents further agreed that employees acquire and modify information to use in the organization, which was depicted by a mean of 3.23 and a standard deviation of 1.23. Additionally, the respondents further strongly agreed that the management used organizational knowledge to make business decisions. This affirmation was supported by a high mean score of 4.31 and a standard deviation of 0.82. Finally, the respondents strongly agreed that the application of

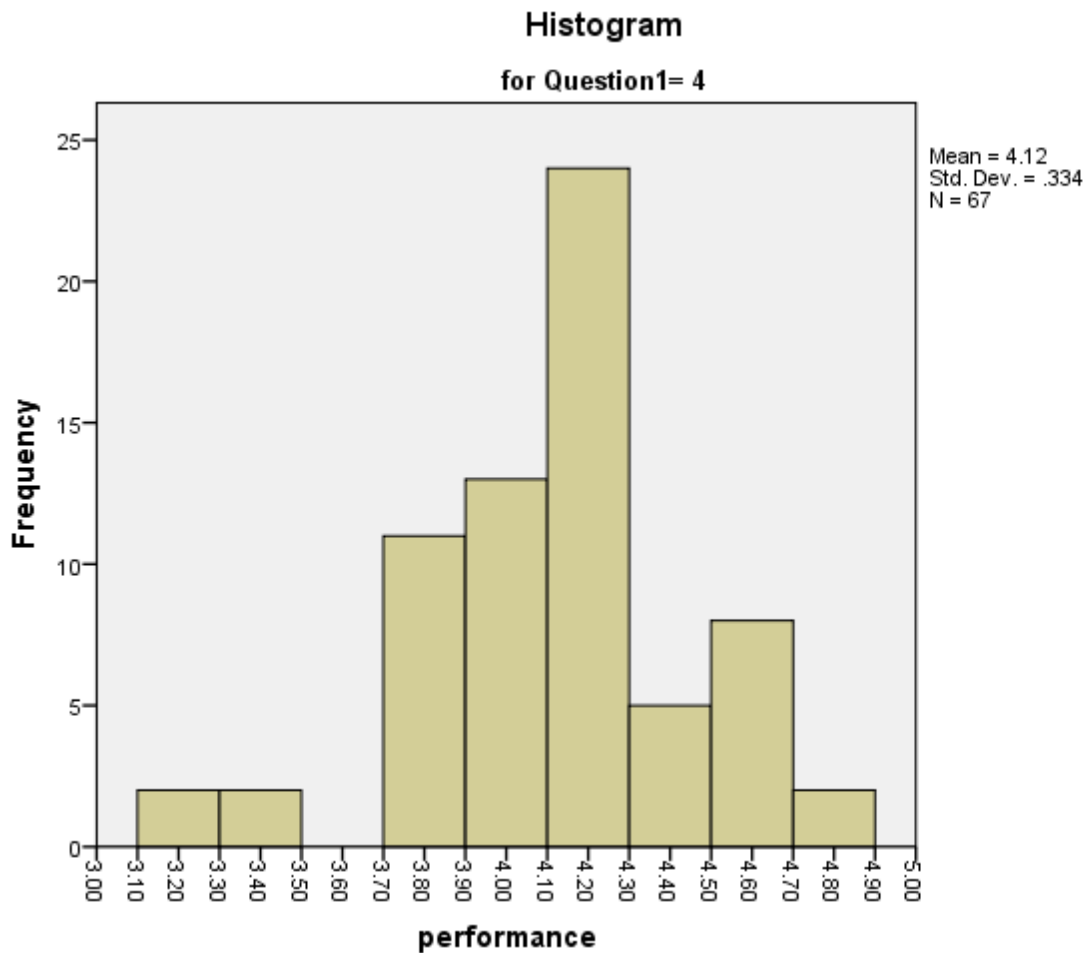
knowledge promotes innovation and the development of new products. This strong affirmation was proven by a high mean score of 4.46 and a standard deviation of 0.74.

#### 4.5 Diagnostic Test Results

This section will discuss the various diagnostic tests conducted, such as normality tests, heteroscedasticity, and multicollinearity.

##### 4.5.1 Normality Test

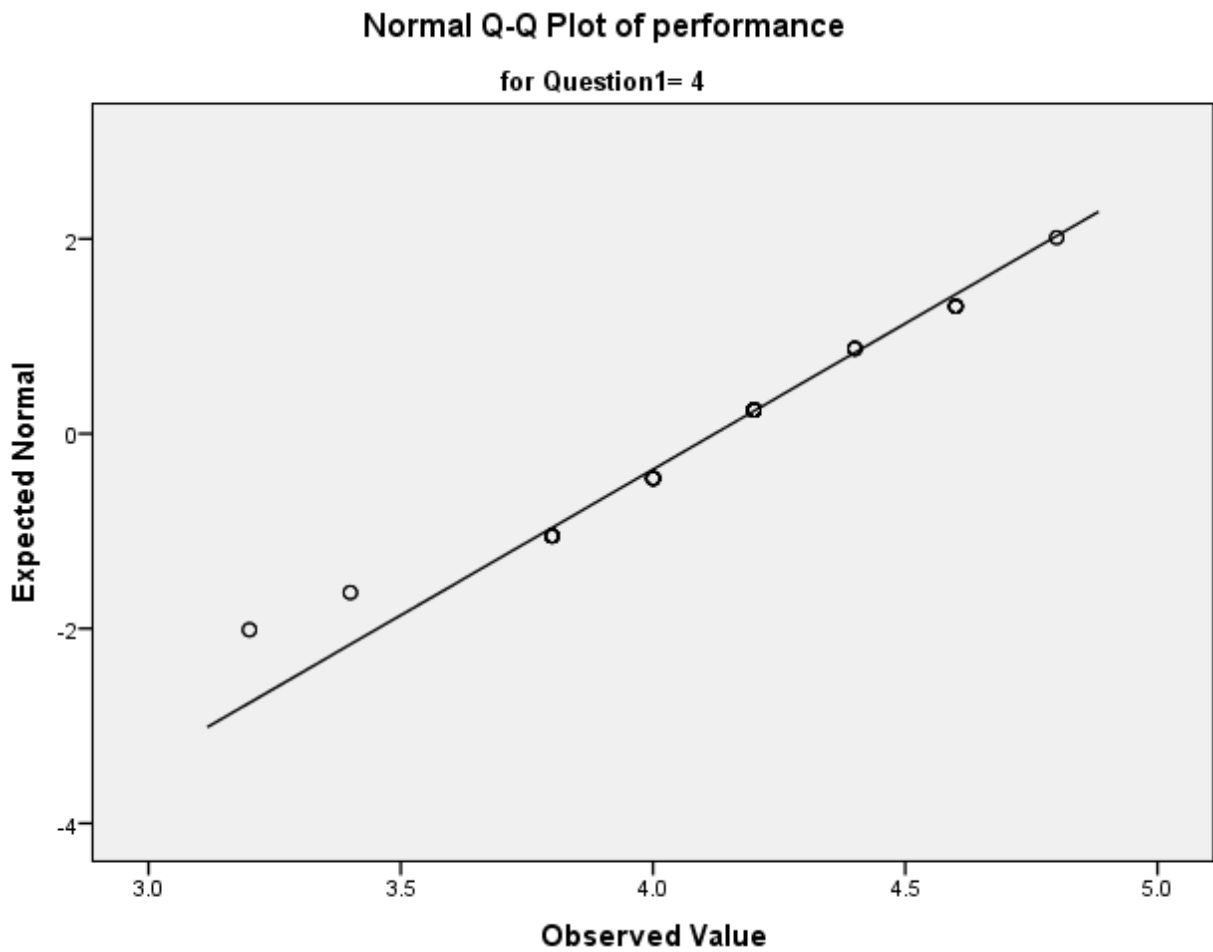
A normality test was conducted of the first independent variable, knowledge acquisition, and the dependent variable, performance, to establish whether the data was normally distributed.



The results indicated that using a histogram that the data is normal since the distribution is normal. The histogram showed that data frequently fell into a normal distribution.

### 1. Test statistic

The Q-Q plot revealed that data was normally distributed because most of the data was on the line, meaning that data originated from the same distribution.



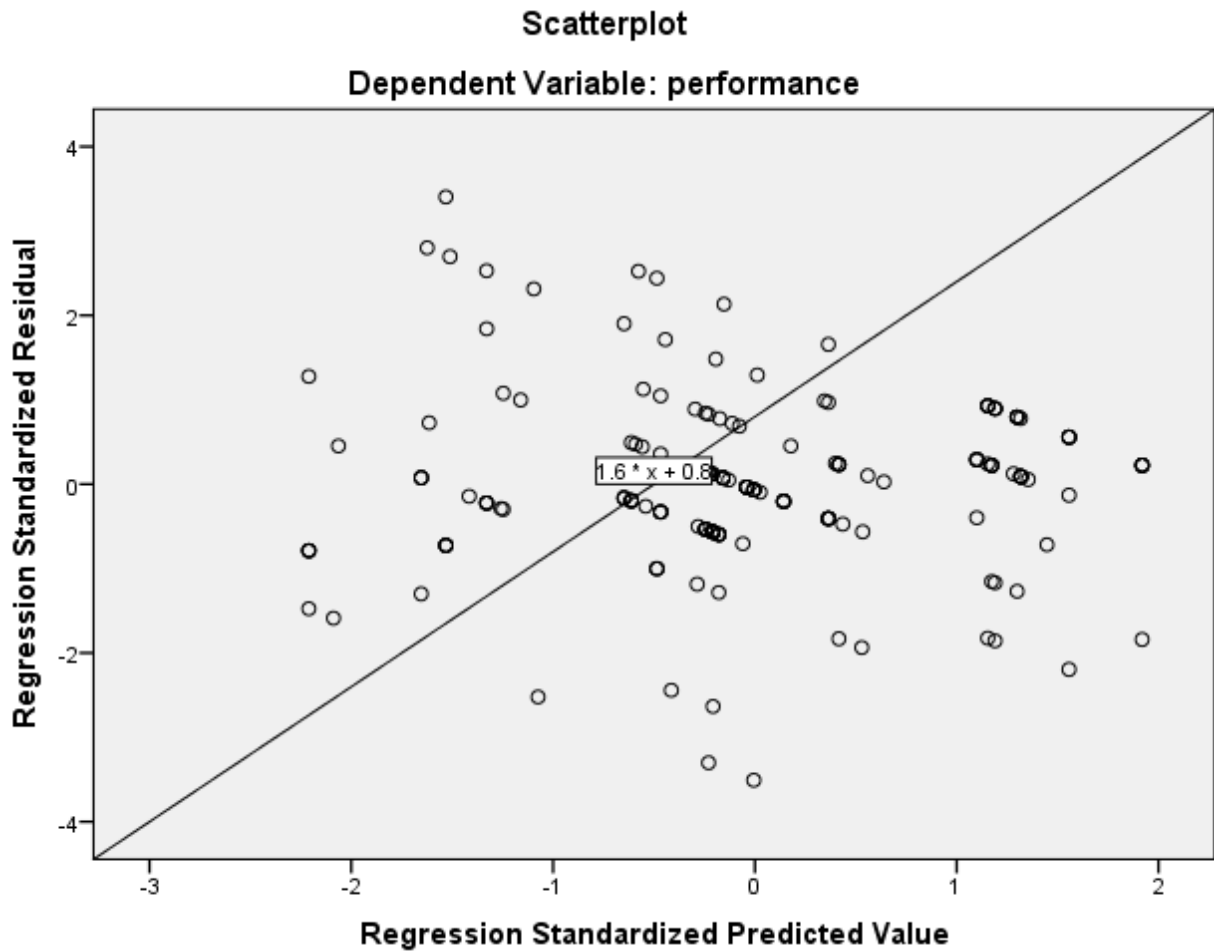
### 4.5.2 Heteroscedasticity

The Heteroscedasticity test showed that data is homogenous because it is even.

**Residuals Statistics<sup>a</sup>**

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	3.6289	4.7350	4.2210	.26785	200
Residual	-1.01955	.98927	.00000	.28773	200
Std. Predicted Value	-2.211	1.919	.000	1.000	200
Std. Residual	-3.508	3.403	.000	.990	200

a. Dependent Variable: performance



The scatter plot showed that the data is homogenous.

#### 4.5.3 Multicollinearity

Multicollinearity - intercorrelations among the predictors ( $X_i$ ) There is no multicollinearity concern as all the VIF values are less than 2.5. From the data analysis, most of the variables had tolerance values  $>0.2$  and VIF values  $<10$ . A VIF  $\geq 10$  indicates

the presence of Multicollinearity. The VIF value for knowledge acquisition was 1.150, the VIF value for knowledge storage was 1.596, the VIF value for knowledge use was 2.089, and the VIF value for knowledge distribution was 1.469. Therefore, there was no multicollinearity among the independent variables because all the VIF values were <10.

**Coefficients<sup>a</sup>**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	.936	.281		3.328	.001		
Knowledge acquisition	-.048	.038	-.071	1.256	.211	.870	1.150
Knowledge storage	-.099	.055	-.119	1.801	.073	.627	1.596
Knowledge use	.432	.079	.412	5.440	.000	.479	2.089
Knowledge distribution	.469	.067	.443	6.974	.000	.681	1.469

a. Dependent Variable: Performance

#### 4.6 Correlation Analysis

A correlation analysis was conducted to establish whether there is a relationship between the independent variables (knowledge acquisition, knowledge storage, knowledge distribution, and knowledge use) and the dependent variable (performance).

## Knowledge Acquisition and Performance

### Correlations

		Knowledge Acquisition	Performance
Knowledge acquisition	Pearson Correlation	1	.150*
	Sig. (2-tailed)		.035
	N	200	200
Performance	Pearson Correlation	.150*	1
	Sig. (2-tailed)	.035	
	N	200	200

\*. Correlation is significant at the 0.05 level (2-tailed).

The Pearson Correlation of .150 indicates a positive correlation between knowledge acquisition and performance. The Sig (2-tailed) p-value of 0.035 shows a positive and significant relationship between knowledge acquisition and performance because the value is <0.05.

## Knowledge Storage and Performance

### Correlations

		Knowledge Storage	Performance
Knowledge storage	Pearson Correlation	1	.256**
	Sig. (2-tailed)		.000
	N	200	200
performance	Pearson Correlation	.256**	1
	Sig. (2-tailed)	.000	
	N	200	200

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

The Pearson Correlation of .256 indicates a positive correlation between knowledge storage and performance. The Sig (2-tailed) p-value of 0.000 shows a positive and significant relationship between knowledge acquisition and performance because the value is <0.05.

## Knowledge Distribution and Performance

		<b>Correlations</b>	
		<b>Knowledge Distribution</b>	<b>Performance</b>
Knowledge distribution	Pearson Correlation	1	.616**
	Sig. (2-tailed)		.000
	N	200	200
performance	Pearson Correlation	.616**	1
	Sig. (2-tailed)	.000	
	N	200	200

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

The Pearson Correlation of .616 indicates a positive correlation between knowledge distribution and performance. The Sig (2-tailed) p-value of 0.000 shows a positive and significant relationship between knowledge acquisition and performance because the value is <0.05.

## Knowledge Use and Performance

		<b>Correlations</b>	
		<b>Knowledge Use</b>	<b>Performance</b>
knowledge use	Pearson Correlation	1	.564**
	Sig. (2-tailed)		.000
	N	200	200
performance	Pearson Correlation	.564**	1
	Sig. (2-tailed)	.000	
	N	200	200

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

The Pearson Correlation of .564 indicates a perfect positive correlation between knowledge use and performance. The Sig (2-tailed) p-value of 0.000 shows a positive and significant relationship between knowledge use and performance because the value is <0.05.

## 4.7 Regression Analysis

The regression analysis is used to show the relationship between a study's independent and dependent variables. In the present study, a regression analysis was conducted to determine the strength of the relationship between this study's independent variables (knowledge acquisition, knowledge storage, knowledge distribution, and knowledge use) and the dependent variable (performance).

**Model Summary**

<b>Model</b>	<b>R</b>	<b>R Square</b>	<b>Adjusted R Square</b>	<b>Std. Error of the Estimate</b>
1	.681 <sup>a</sup>	.464	.453	.29066

a. Predictors: (Constant), knowledge use, Knowledge acquisition, knowledge distribution, knowledge storage

From the above table, the value of R is 0.681; this means that there exists a strong and positive relationship between knowledge management processes (knowledge acquisition, knowledge storage, knowledge distribution, and knowledge use) and performance. The value of R square is 0.464; this means the overall regression model of the study was fit. The value of adjusted R square is given as 0.453, meaning that the 45.3% change in performance is explained by knowledge management processes.

## ANOVA

ANOVA test was used to establish whether there are statistical differences in the study's independent variables (knowledge acquisition, knowledge storage, knowledge distribution, and knowledge use) and the dependent variable (performance).

**ANOVA<sup>a</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	14.277	4	3.569	42.247	.000 <sup>b</sup>
	Residual	16.475	195	.084		
	Total	30.752	199			

a. Dependent Variable: Performance

b. Predictors: (Constant), knowledge use, Knowledge acquisition, knowledge distribution, knowledge storage

The findings further confirm that the regression model is significant and supported by  $F=42.247$  ( $p<0.000$ ) since the p-value was 0.000, which is less than 0.05. The study conducted a regression of coefficient analysis to establish the statistical and positive significant relationship between the independent variables (knowledge management processes), notably knowledge acquisition, knowledge storage, knowledge distribution, and knowledge use on the dependent variable, which is the performance of telecommunication companies in Kenya.

**T-Tests**

T-tests were used to the effect of the study's independent variables and the dependent variable.

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.936	.281		3.328	.001
	Knowledge acquisition	-.048	.038	-.071	-1.256	.211
	Knowledge storage	-.099	.055	-.119	-1.801	.073
	Knowledge distribution	.469	.067	.443	6.974	.000
	Knowledge use	.432	.079	.412	5.440	.000

a. Dependent Variable: Performance

The coefficients were used to test the effect of the independent variables (knowledge acquisition, knowledge storage, knowledge distribution, and knowledge use) on the dependent variable (performance). The t-tests indicate the relationship between the independent variables and the dependent variable. A t-test of  $> 1.96$  indicates a strong relationship between the variables, while a significance of  $<0.05$  indicates a strong relationship between the variables. The table above shows the t-tests and the significant p-values. Knowledge acquisition and knowledge storage have t-tests of  $-1.256$  and  $-1.801$ , respectively. These t-tests indicate that these two variables do not significantly affect performance. Conversely, the t-tests of knowledge distribution and knowledge use are  $6.974$  and  $5.440$ , respectively, which is  $>1.96$ , depicting a strong and positive relationship between knowledge distribution and performance and knowledge use and performance. The significant p-values of knowledge acquisition and knowledge storage are  $.211$  and  $.073$ , respectively, which is  $>0.05$ . Therefore, the P-value shows that knowledge acquisition and storage do not significantly impact performance. On the contrary, both knowledge distribution and knowledge use have P-values of  $.000$ , which is  $<0.05$ . Therefore, this means that knowledge distribution and knowledge use positively and significantly impact performance.

## **4.8 Discussion of Findings**

This section discussed the results of the study based on the study's objectives.

### **4.8.1 Effect of Knowledge Acquisition on Performance**

The study's results revealed that the respondents strongly agreed that knowledge acquisition has a positive and significant effect on the performance of telecommunication companies in Kenya. The study's results found that there is a significant positive relationship between knowledge acquisition and performance. A Pearson Correlation of  $.150$  between knowledge acquisition and performance indicates a perfect positive correlation between

knowledge acquisition and performance. The Sig (2-tailed) p-value of 0.035 shows that there is a positive and significant relationship between knowledge acquisition and performance because the value is  $<0.05$ . These results concurred with the findings of Thang and Tuan (2020), who posited that knowledge acquisition helps organizations to gather meaningful information that promotes continuous development. The authors further argued that continuous development in organizations is indispensable as it helps organizations to focus on valuable activities that improve their performance. The study's findings also reiterated a study conducted by Gatuyu and Kinyua (2020), who affirmed that knowledge acquisition is requisite in organizations as it promotes innovation. The knowledge acquired allows employees to become creative and innovate products and services that propel business performance.

#### **4.8.2 Effect of Knowledge Storage on Performance**

The study's findings showed that the respondents strongly agreed that knowledge storage has a positive and significant effect on the performance of telecommunication companies in Kenya. This study's findings established that there is a positive correlation between knowledge storage and performance. A Pearson Correlation of .256 indicates a positive correlation between knowledge storage and performance. The Sig (2-tailed) p-value of 0.000 shows that there is a positive and significant relationship between knowledge acquisition and performance because the value is  $<0.05$ . The findings aligned with the study by Kimaiyo et al. (2015), who posited that knowledge storage facilitates easy retrieval and the utilization of knowledge. For instance, if certain knowledge is required to be used, it can be easily retrieved if it is stored in the appropriate places. The findings also corroborated with the findings by Henao-García, Lozada, and Arias-Pérez (2020), who noted that knowledge storage saves organizational resources. Saving resources

allows organizations to channel their resources to other valuable business processes, which promotes improved business performance.

#### **4.8.3 Effect of Knowledge Distribution on Performance**

The study's findings showed that the respondents strongly agreed that knowledge distribution has a positive and significant effect on the performance of telecommunication companies in Kenya. The study's results found that there is a significant positive relationship between knowledge distribution and performance. The Pearson Correlation of .616 indicates a positive correlation between knowledge distribution and performance. The Sig (2-tailed) p-value of 0.000 shows a positive and significant relationship between knowledge acquisition and performance because the value is  $<0.05$ . This study's findings were similar to the claims made by Ahmad and Karim (2020), who claimed that knowledge distribution allows employee engagement. The authors further argued that employee engagement promotes employee interaction. When employees interact, they share organizational values, work towards achieving organizational goals and objectives, and promote organizational performance. The study's findings also aligned with the findings by Kashari and Taherib (2019), who reported that knowledge distribution allows cost savings. Organizations save costs on the amount that would be spent in acquiring additional knowledge. Thus, when organizations save costs, they channel the resources to other business processes, which promotes organizational performance.

#### **4.8.4 Effect of Knowledge Use on Performance**

The study's findings showed that the respondents strongly agreed that knowledge use has a positive and significant effect on the performance of telecommunication companies in Kenya. The study's results found that there is a significant positive relationship between knowledge use and performance. The Pearson Correlation of .564 indicates a perfect positive correlation between

knowledge use and performance. The Sig (2-tailed) p-value of 0.000 shows that there is a positive and significant relationship between knowledge use and performance because the value is  $<0.05$ . For instance, the study's results agreed with the findings by Alsabbagh and Khalil (2017), who contended that knowledge use is important because knowledge is used in making business decisions that affect business performance. This study's findings also agreed with the findings by Mishra and Upadhyay (2021), who affirmed that knowledge is implemented in business to improve output and quality, which positively and significantly impacts organizational performance.

## **CHAPTER FIVE: SUMMARY, CONCLUSION, AND RECOMMENDATIONS**

### **5.1 Introduction**

This chapter presented a summary, conclusion, and recommendation of the data findings on the effect of knowledge management processes on the performance of telecommunication companies in Kenya.

### **5.2 Summary of the Study**

The main aim of the present study was to establish the effect of knowledge management processes on the performance of telecommunication companies in Kenya. The objectives of this study were:

1. To establish how the effect of knowledge acquisition on the performance of telecommunication companies in Kenya.
2. To examine how the effect of knowledge storage on the performance of telecommunication companies in Kenya.
3. To find out how the effect of knowledge dissemination on the performance of telecommunication companies in Kenya.
4. To assess how the effect of knowledge utilization on the performance of telecommunication companies in Kenya.

#### **5.2.1 Effect of Knowledge Acquisition on Performance**

From the study's findings, it is evident that knowledge acquisition is an important function in knowledge management that helps an organization to achieve enhanced performance. Knowledge acquisition was measured using organizational learning, knowledge absorption, and creative process. After conducting a regression analysis of knowledge acquisition and

performance, there was no significant correlation between knowledge acquisition and performance. Knowledge acquisition had a t-test of -1.256. T-test should have a value of 1.96 to prove a positive correlation between the independent and the dependent variables. Therefore, there is no positive relationship between knowledge acquisition and the performance of telecommunication companies in Kenya. The significant P-Value is .211, which is  $>0.05$ . The P-Value should be  $<0.05$ , which denotes a positive and significant relationship between the independent and the dependent variables. Therefore, there is no positive and significant relationship between knowledge acquisition and the performance of telecommunication companies in Kenya.

### **5.2.2 Effect of Knowledge Storage on Performance**

From the study's findings, it is evident that knowledge storage is an important function in knowledge management that helps an organization to achieve enhanced performance. Knowledge acquisition was measured using knowledge retrieval, tacit knowledge, and explicit knowledge. The study found that knowledge storage positively and significantly affects performance. After conducting a regression analysis of knowledge storage and performance, there was no significant correlation between knowledge acquisition and performance. Knowledge storage had a t-test of -1.801. The T-test should have a value of 1.96 to prove a positive correlation between the independent and the dependent variables. Therefore, there is no positive relationship between knowledge storage and the performance of telecommunication companies in Kenya. The significant P-Value is 0.73, which is  $>0.05$ . The P-Value should be  $<0.05$ , which denotes a positive and significant relationship between the independent and the dependent variables. Therefore, there is no positive and significant

relationship between knowledge storage and the performance of telecommunication companies in Kenya.

### **5.2.3 Effect of Knowledge Distribution on Performance**

From the study's findings, it is evident that knowledge distribution is an important function in knowledge management that helps an organization to achieve enhanced performance. Knowledge acquisition was measured using information sharing, the rate of current technology, and the time spent searching for information. After conducting a regression analysis of knowledge distribution and performance, there was no significant correlation between knowledge acquisition and performance. Knowledge distribution had a t-test of 6.974. The T-test should have a value of 1.96 to prove a positive correlation between the independent and the dependent variables. Therefore, there is a very strong and positive relationship between knowledge distribution and the performance of telecommunication companies in Kenya. The significant P-Value is .000, which is  $<0.05$ . The P-Value should be  $<0.05$ , which denotes a positive and significant relationship between the independent and the dependent variables. Therefore, there is a strong positive and significant relationship between knowledge distribution and the performance of telecommunication companies in Kenya.

### **5.2.4 Effect of Knowledge Use on Performance**

From the study's findings, it is evident that knowledge use is an important function in knowledge management that helps an organization to achieve enhanced performance. Knowledge acquisition was measured using knowledge recovery, knowledge transformation, and knowledge exploitation. After conducting a regression analysis of knowledge use and performance, there was a positive and significant correlation between knowledge use and performance. Knowledge acquisition had a t-test of 5.440. The T-test should have a value of

>1.96 to prove a positive correlation between the independent and the dependent variables. Therefore, there is a positive relationship between knowledge use and the performance of telecommunication companies in Kenya. The significant P-Value is .000, which is <0.05. The P-Value should be <0.05, which denotes a positive and significant relationship between the independent and the dependent variables. Therefore, there is a positive and significant relationship between knowledge use and the performance of telecommunication companies in Kenya.

### **5.3 Conclusion**

In summary, the study concluded that knowledge acquisition and knowledge storage do not significantly affect the performance of telecommunication companies in Kenya. This was due to the poor correlation scores between knowledge acquisition and knowledge storage on the performance of telecommunication companies in Kenya. However, the study concluded that knowledge distribution and knowledge use positively and strongly correlate with the performance of telecommunication companies in Kenya.

Concerning knowledge distribution, the study concluded that knowledge distribution could be deployed in organizations to ensure that employees disseminate knowledge to their colleagues to facilitate organizational growth. The study concluded that knowledge use is necessary for organizations because organizations need to deploy knowledge to improve business processes and achieve enhanced performance.

## **5.4 Recommendations**

### **5.4.1 Policy Recommendations**

Based on the study's objectives, the following recommendations were made:

The study findings discovered that knowledge distribution and knowledge use positively and significantly affect the performance of telecommunication companies in Kenya. Therefore, this study recommends that organizations should ensure knowledge dissemination to all employees to ensure that they work towards a common goal of availing the necessary information required by the employees to facilitate organizational growth.

The study's findings revealed that knowledge use positively and significantly impact the performance of telecommunication companies. For that reason, the study recommends that organizational knowledge should be applied in making business decisions to influence the company's performance.

### **5.4.2 Recommendations for Further Studies**

The study recommends that future studies should investigate the effect of the knowledge management process on performance in other industries, such as the banking industry in Kenya. The study recommends that knowledge management processes should be deployed in the banking industry due to the importance of sharing knowledge in the banking industry to promote the industry's growth.

## **5.5 Limitations of the Study**

Study limitations are factors that are beyond a researcher's control, and they limit a study's findings (Theofanidis & Fountouki, 2019, p. 157). In the present study, the following were the limitations: Some participants were hesitant to fill out the questionnaire because they feared that

their information would be made public. However, the researcher guaranteed them confidentiality by assuring them that their personal information would not be included in the questionnaire. The researcher also required the study participants to fill out an informed consent form. The form assured them that neither their personal details nor the details of their company would be revealed. This assurance gave the participants the confidence to give credible information, which increased the study's credibility and reliability.

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## APPENDICES

### APPENDIX I: INTRODUCTION LETTER

DEAR RESPONDENTS

13<sup>th</sup> April 2022

**RE: REQUEST TO FILL THE QUESTIONNAIRE**

My name is Paul Mwita Kaplong, and I am a final year Master’s student at KCA University. I am conducting research on “The effect of knowledge management processes on the performance of telecommunication companies in Kenya.” You have been invited to participate in this study because you are a senior manager in your organization, and you participate in deploying the knowledge management processes. Before agreeing to participate, please read the consent statement. Once you have read and consented to participate in the study, please select one of the options below to confirm consent.

I have read and understood the information, and I consent to participate in this study

Yes  No

Concerning privacy and confidentiality, you will **NOT BE** asked to fill in your name or the name of your school. All the questionnaires will be destroyed after data recording. This questionnaire will take approximately 15–20 minutes to complete. Kindly answer all the questions to the best of your knowledge to help me develop findings that will help answer the research questions. Kindly tick or fill in the black spaces with the most suitable answer or response. Kindly fill and return the questionnaire by 29<sup>th</sup> April 2022. If you have any questions regarding the questionnaire, please get in touch with me on the details provided below. Thank you very much for your time and cooperation.

**Kind regards,**

**Paul Mwita Kaplong**  
[pkaplong@kca.ac.ke](mailto:pkaplong@kca.ac.ke)

## APPENDIX II: QUESTIONNAIRE

### SECTION A: BACKGROUND INFORMATION

Kindly tick [√] or fill in blank spaces with your most suitable answer or response

1. Please indicate your gender

Male

Female

2. Please select your age category.

Below 25 years

26-30 years

31-34 years

Above 40 years

3. Please indicate your highest level of formal education

High school certificate

Diploma

University degree

Postgraduate

### SECTION B: KNOWLEDGE ACQUISITION

4. Indicate your level of agreement with the following statements about knowledge acquisition and performance by putting a tick [√] to the level you agree with. Please rate the extent to which you agree/disagree with the following statements: 1= Strongly Disagree (SD), 2= Disagree (D), 3= Undecided (U), 4= Agree (A), and 5= Strongly Agree (SA).

NO.	Statement	Level of Agreement with Statement				
		SD	D	U	A	SA
		1	2	3	4	5
1.	The organization gathers knowledge from customers, markets, and suppliers, which is used to promote organizational performance.					
2.	My company adopts absorptive capabilities, such as knowledge utilization, to promote organizational performance.					
3.	The organization creates knowledge and makes it available to the organization's knowledge system to promote organizational performance.					
4.	Knowledge acquisition enhances creativity in the company, promoting organizational performance.					
5.	Knowledge acquisition encourages innovation, resulting in organizational performance.					

5. In your opinion, to what extent does knowledge acquisition influence organizational performance?

- Very great extent
- Great extent
- Moderate extent
- Small extent

6. Kindly indicate other factors that affect knowledge acquisition.....

.....

**SECTION C: KNOWLEDGE STORAGE**

7. Indicate your level of agreement with the following statements about knowledge storage and performance by putting a tick [√] to the level you agree with. Please rate the extent to which you agree/disagree with the following statements: 1= Strongly Disagree (SD), 2= Disagree (D), 3= Undecided (U), 4= Agree (A), and 5= Strongly Agree (SA).

NO.	Statement	Level of Agreement with Statement				
		SD	D	U	A	SA
		1	2	3	4	5
1.	The organization stores relevant data for future use.					
2.	My company has an operational knowledge retrieval process.					
3.	The organization ensures the utilization of employees' tacit knowledge.					
4.	Employees can easily store, access, and exchange explicit knowledge.					
5.	Knowledge storing promotes organizational performance in my company.					

8. In your opinion, to what extent does knowledge storage influence organizational performance?

- Very great extent
- Great extent
- Moderate extent
- Small extent

9. Kindly indicate other factors that affect knowledge storage.....

.....

**SECTION D: KNOWLEDGE DISTRIBUTION**

10. Indicate your level of agreement with the following statements about knowledge distribution and performance by putting a tick [√] to the level you agree with. Please rate the extent to which you agree/disagree with the following statements: 1= Strongly Disagree (SD), 2= Disagree (D), 3= Undecided (U), 4= Agree (A), and 5= Strongly Agree (SA).

NO.	Statement	Level of Agreement with Statement				
		SD	D	U	A	SA
		1	2	3	4	5
1.	The employees share knowledge willingly.					
2.	The management constantly sensitizes the employees to distribute and share knowledge amongst themselves to improve business performance.					
3.	The management has deployed adequate technology to facilitate knowledge distribution.					
4.	The employees have been trained on knowledge distribution techniques.					
5.	It is easy for employees to distribute knowledge among their colleagues.					

11. In your opinion, to what extent does knowledge distribution influence organizational performance?

Very great extent

Great extent

Moderate extent

Small extent

12. Kindly indicate other factors that affect knowledge distribution.....  
.....

**SECTION E: KNOWLEDGE USE**

13. Indicate your level of agreement with the following statements about knowledge use and performance by putting a tick [√] to the level you agree with. Please rate the extent to which you agree/disagree with the following statements: 1= Strongly Disagree (SD), 2= Disagree (D), 3= Undecided (U), 4= Agree (A), and 5= Strongly Agree (SA).

NO.	Statement	Level of Agreement with Statement				
		SD	D	U	A	SA
		1	2	3	4	5
1.	Employees use organizational knowledge to improve organizational performance.					
2.	Employees exploit the available knowledge and apply it in various organizational processes.					
3.	Employees acquire and modify information to use in the organization.					
4.	The management uses knowledge to inform business decisions.					
5.	Knowledge application promotes innovation and the development of new products.					

14. In your opinion, to what extent does knowledge use influence organizational performance?

Very great extent

Great extent

Moderate extent

Small extent

15. Kindly indicate other factors that affect knowledge use.....  
.....

**SECTION F: PERFORMANCE**

16. Indicate your level of agreement with the following statements about performance by putting a tick [√] to the level you agree with. Please rate the extent to which you agree/disagree with the following statements: 1= Strongly Disagree (SD), 2= Disagree (D), 3= Undecided (U), 4= Agree (A), and 5= Strongly Agree (SA).

NO.	Statement	Level of Agreement with Statement				
		SD	D	U	A	SA
		1	2	3	4	5
1.	The organization realized increased sales after adopting knowledge storage.					
2.	Knowledge distribution promotes increased revenue.					
3.	Our stock prices have increased tremendously after we maximized knowledge sharing among our employees.					
4.	The use of knowledge repositories in our organization has allowed easier retrieval, enhancing increased business process efficiency.					
5.	The adoption of knowledge management processes in our organization improves customer satisfaction.					

17. Kindly indicate other factors that affect performance.....  
.....

**Thank you for taking your time to fill this questionnaire!**