THE EFFECT OF TECHNOLOGICAL INNOVATION ON ACCOUNTING PRACTICES, A CASE STUDY OF SUPERMARKETS IN THIKA TOWN

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DECLARATION

This project is our original work and has not been presented in any other institution for a degree or otherwise

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ABSTRACT

Technological innovation has had a significant impact on accounting practices, transforming traditional accounting processes and enabling new ways of working The integration of digital technologies has allowed for greater automation and accuracy in tasks such as data entry, record keeping, and financial analysis. This has not only improved efficiency and productivity but has also provided accountants with more time to focus on higher-value tasks, such as data analysis and strategic planning In addition to automation, technological innovations such as cloud computing and blockchain have also revolutionized the way accounting information is stored, accessed, and shared. Cloud computing allows for remote access to accounting software and data, while blockchain technology offers a secure and transparent ledger system that can streamline financial transactions and reduce the risk of fraud However while technology has brought about many benefits, it has also presented challenges, particularly in terms of data privacy and cybersecurity. Accounting professionals must remain vigilant and up-to-date with the latest security measures and regulations to safeguard sensitive financial information Overall, the impact of technological innovation on accounting practices has been significant and transformative. As technology continues to evolve, it is likely that we will see further changes and advancements in accounting processes and practices.

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

Technological innovation has become a crucial aspect of the modern business environment, and accounting practices have not been left behind. With the advent of various technological innovations, such as artificial intelligence, blockchain, cloud computing, and big data, the accounting industry has undergone significant changes in recent years. These changes have influenced the way accounting practices are conducted, and have resulted in an increasing demand for accountants to have technological skills to perform their job effectively.

The effect of technological innovation on accounting practices has become a topic of interest to academics, practitioners, and policymakers alike. Many studies have examined the effect of technological innovation on accounting practices, and the findings have been mixed. Some studies suggest that technological innovation has led to significant improvements in the efficiency and effectiveness of accounting practices, while others argue that it has led to significant job losses and reduced demand for traditional accounting services.

Moreover, technological innovation has enabled accounting firms to offer new and innovative services, such as real-time financial reporting, data analytics, and fraud detection, which were not previously possible. Additionally, technological innovations have enabled companies to automate many routine accounting tasks, reducing the need for human intervention, and allowing accountants to focus on more value-adding tasks.

Despite the potential benefits of technological innovation in accounting practices, concerns have been raised about the impact on the job market for traditional accountants. Some argue that technological innovations may lead to job losses and reduced demand for traditional accounting services. Therefore, it is important to explore the impact of technological innovation on accounting practices in detail to provide insights into the potential benefits and challenges of these innovations.

This study aims to examine the effect of technological innovation on accounting practices. The study will explore the impact of various technological innovations on accounting practices and assess the potential benefits and challenges associated with these innovations. The findings of this study will contribute to the existing literature on technological innovation and accounting practices and provide insights into the potential implications for practitioners and policymakers.

1.2 Statement of Problem

As technology continues to advance at an unprecedented pace, there is growing concern about the impact of technological innovation on traditional accounting practices. With the increasing use of automated systems, cloud-based computing, artificial intelligence, and blockchain, there is a need to investigate how these technological advancements affect accounting practices, including financial reporting, auditing, and tax compliance. The problem is to determine whether the integration of technology in accounting practices enhances the efficiency, accuracy, and reliability of accounting information or whether it leads to unintended consequences such as job displacement, loss of control over financial data, and potential security risks. Therefore, there is a need for research to assess the impact of technological innovation on accounting practices and identify potential challenges and opportunities that emerge from these changes.

1.3 Purpose of the study

To understand the impact of technology on accounting practices: The study can help identify how technological innovations are changing the way accounting is done, and what areas of accounting are being affected the most. This can help accountants and organizations understand the opportunities and challenges of new technologies in accounting.

To identify the benefits of technology adoption: The study can help identify the potential benefits of adopting new technologies in accounting, such as increased efficiency, accuracy, and speed of accounting processes. This can help organizations make informed decisions about whether and how to adopt new technologies in their accounting practices.

To identify the challenges of technology adoption: The study can help identify the potential challenges of adopting new technologies in accounting, such as increased complexity, security risks, and resistance to change. This can help organizations understand the risks and challenges associated with technology adoption and develop strategies to address them.

To inform policy decisions: The study can help inform policy decisions related to the regulation and oversight of technology adoption in accounting. This can help ensure that new technologies are used in ways that promote transparency, accountability, and the integrity of financial reporting.

1.4 Conceptual framework

A conceptual framework shows the relationship between dependent variables and independent variables as well as intervening variables

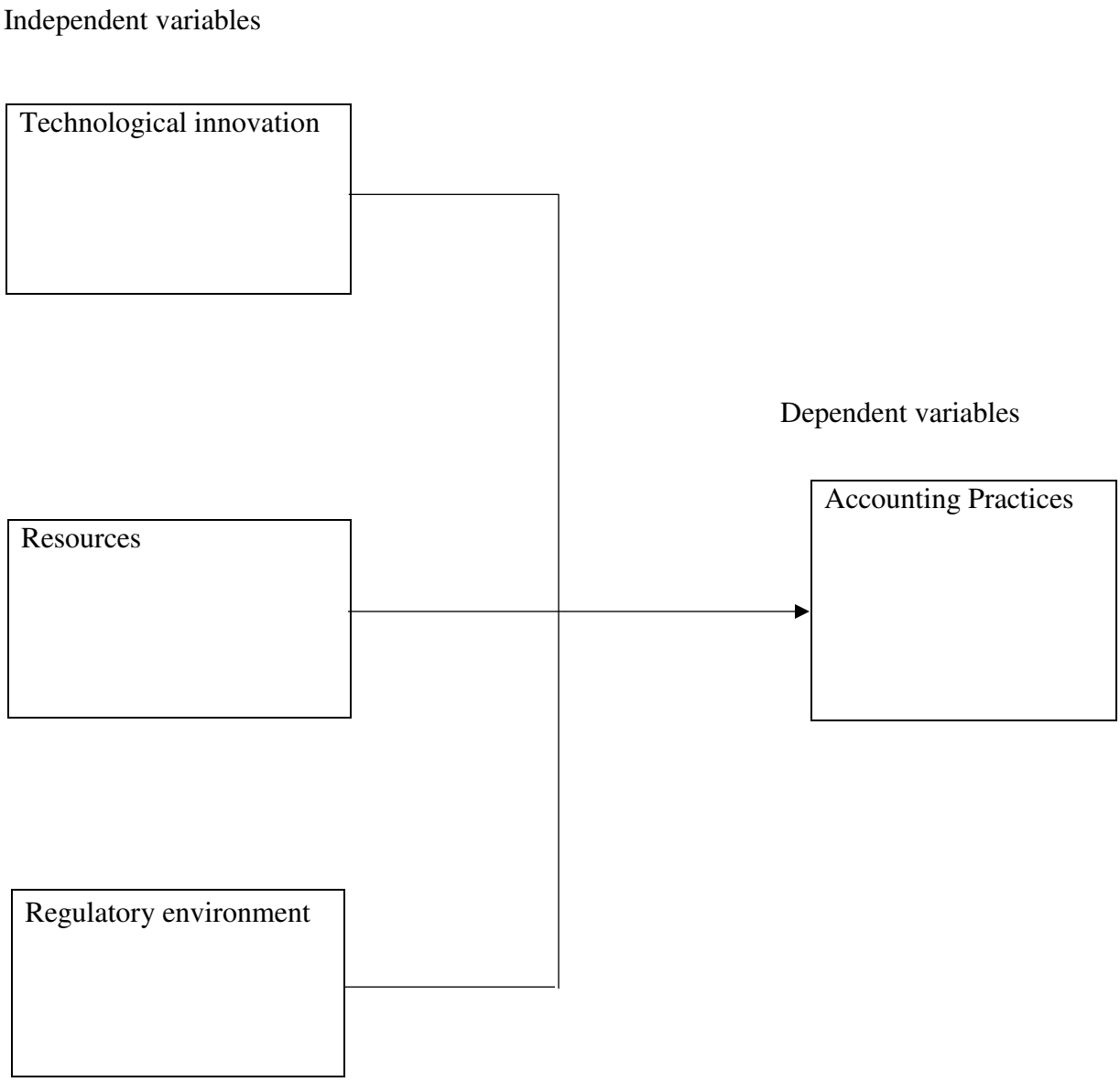

Figure 1: Conceptual Framework

1.5 Research Questions

1. What is the effect of technological innovations on accounting practices in supermarkets in Thika
2. What is the effect of resources on accounting practices in supermarkets in Thika
3. What is the effect of regulatory environment on accounting practices in supermarkets in Thika

1.6 Objectives of the study

1.6.1 General Objective

To examine effect of technological innovation on accounting practices

1.6.2 Specific Objectives

1. To determine the effect of technological innovations on accounting practices in supermarkets in Thika
2. To assess the effect of resources on accounting practices in supermarkets in Thika
3. To examine the effect of regulatory environment on accounting practices in supermarkets in Thika

1.7 Significance of the Study

The study on the effect of technological innovation on accounting practices has significant implications for various stakeholders, including accounting professionals, businesses, policymakers, and investors. Here are some of the key significances of this study:

Improved Efficiency: The study can help accounting professionals identify and adopt innovative technologies that can streamline their workflow and increase efficiency. By using automated accounting tools, they can reduce the time and effort required for manual data entry, reconciliations, and financial reporting, allowing them to focus on value-added activities such as analysis, strategic planning, and decision-making.

Enhanced Accuracy: Technological innovation can help improve the accuracy and reliability of accounting practices. Automated accounting tools are less prone to errors and inconsistencies compared to manual processes, reducing the risk of financial misstatements, fraud, and other accounting irregularities. This can enhance the quality of financial reporting and increase stakeholder confidence in the company's financial statements.

Cost Reduction: Adopting innovative technologies can help businesses reduce their accounting costs by minimizing the need for manual labor, paper-based documents, and physical storage. This can lead to significant savings in time, resources, and expenses, enabling companies to allocate more resources towards growth and development initiatives.

Competitive Advantage: Companies that leverage technological innovations in their accounting practices may gain a competitive advantage over their peers. By using cutting-edge tools to automate and optimize their accounting processes, they can deliver superior financial reporting,

analysis, and insights, which can help them make better decisions and outperform their competitors.

Policy Implications: The study can have significant policy implications for regulators and policymakers. They can use the findings to evaluate the effectiveness of existing accounting standards and regulations in the context of emerging technological innovations. They can also identify potential regulatory gaps or opportunities to promote the adoption of innovative accounting technologies.

1.8 Scope of the Study

The scope of the study on the effect of technological innovation on accounting practices may include examining the impact of new and emerging technologies on various aspects of accounting practices such as financial reporting, auditing, internal controls, and decision-making processes. The study may explore the potential benefits and challenges associated with the adoption of technological innovations in accounting practices.

The study may also investigate the factors that influence the adoption and implementation of new technologies in accounting practices, such as organizational culture, resources, and skills. The scope may also cover the impact of technological innovations on the accounting profession, including the skills and competencies required by accounting professionals in the age of digital transformation.

Furthermore, the study may examine the ethical and regulatory implications of technological innovations in accounting practices, including issues related to data privacy, cybersecurity, and compliance with accounting standards and regulations.

Overall, the scope of the study on the effect of technological innovation on accounting practices is broad and multidisciplinary, covering various aspects of accounting practices, technology, and organizational behavior

1.9 Limitation of the Study

The study was faced the following challenges:

Sample size: The study may have a limited sample size, which could affect the generalizability of the findings to a larger population. Timeframe: The study may only focus on a specific period of time, and the findings may not be applicable to other timeframes. Geographical location: The study may focus on a specific geographical location, and the findings may not be applicable to other regions. Data collection: The study may rely on self-reported data, which could be biased

or incomplete. Technology adoption: The study may not account for differences in technology adoption rates among firms, which could affect the findings. Limited variables: The study may only consider a limited number of variables, which could affect the accuracy of the results. External factors: The study may not account for external factors that could impact accounting practices, such as changes in regulations or economic conditions. Time and resource constraints: The study may be limited by time and resource constraints, which could affect the depth and breadth of the analysis.

1.10 Assumption of the Study

The assumptions below were made, Technological innovation will have a significant impact on accounting practices: The assumption is that technological innovations such as cloud computing, artificial intelligence, and blockchain will fundamentally change the way accounting is done, and the study will explore these changes. Accounting practices are not static: The study assumes that accounting practices are constantly evolving and adapting to changes in technology, business models, and regulatory environments. Technological innovation will lead to increased efficiency: It is assumed that technological innovation will enable accounting professionals to automate routine tasks, reduce errors, and increase the speed and accuracy of financial reporting. Technological innovation will lead to new opportunities: The study assumes that technological innovation will create new opportunities for accountants to provide value-added services, such as data analytics and business intelligence. Technological innovation will change the skillset required of accountants: The study assumes that technological innovation will require accountants to develop new skills, such as data analysis and programming, and the study will explore how the profession is adapting to these changes.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

Technological innovation has become an essential element in the contemporary business landscape, as it has brought about significant changes in various aspects of business operations, including accounting practices. The advent of technology has revolutionized accounting practices, enabling accounting professionals to automate tasks, streamline processes, and enhance decision-making processes. As such, the impact of technological innovation on accounting practices has become a topic of significant interest for researchers, practitioners, and policymakers alike.

The purpose of this literature review is to explore the effects of technological innovation on accounting practices, focusing on the changes that have occurred in recent years. The review will analyze various scholarly works, including academic journals, books, and other relevant literature, to provide a comprehensive overview of the topic. The literature review will be structured to provide an overview of the changes that have occurred in accounting practices due to technological innovation, including the benefits and challenges associated with these changes.

Overall, the literature review aims to contribute to a better understanding of the impact of technological innovation on accounting practices. The review will be particularly relevant for accounting professionals, policymakers, and researchers interested in exploring the role of technology in accounting practices and the broader business landscape.

2.2 Technological innovation

Technological innovation has transformed the way we live, work and interact with each other. In the field of accounting, technological innovation has had a significant impact on how businesses operate, and has transformed traditional accounting practices. In this literature review, we explore the effect of technological innovation on accounting practices.

Cloud Computing Cloud computing has been one of the most significant technological innovations in the accounting industry. According to a study by Deloitte, cloud computing has allowed for more efficient data management, reduced costs and has allowed for more collaboration and flexibility in accounting practices (Deloitte, 2020). This innovation has also allowed for easier access to financial data and has allowed businesses to access financial information from any location, which has increased the speed of decision-making.

Artificial Intelligence and Automation Artificial intelligence and automation have also had a significant impact on accounting practices. These technologies have allowed for greater accuracy in accounting practices, which has improved the reliability of financial data. Automation has also reduced the need for manual input of data, which has reduced the risk of human error. According to a study by PwC, artificial intelligence has the potential to automate 40% of accounting activities (PwC, 2018).

Blockchain Technology Blockchain technology is a distributed ledger technology that has the potential to revolutionize accounting practices. According to a study by the Journal of Accountancy, blockchain technology can help reduce fraud, increase transparency, and reduce the need for intermediaries in financial transactions (Journal of Accountancy, 2020). The technology can also help with tracking the ownership and transfer of assets, which can improve the accuracy and reliability of financial data.

Mobile Technology Mobile technology has allowed for more flexibility in accounting practices. According to a study by Intuit, mobile technology has allowed for greater accessibility to financial information and has increased the speed of decision-making (Intuit, 2018). Mobile technology has also allowed for easier collaboration between team members and has improved the accuracy and reliability of financial data.

Data Analytics Data analytics is the process of using statistical analysis and other techniques to interpret data. Data analytics has become increasingly important in the field of accounting. According to a study by Accenture, data analytics can help accountants identify patterns and trends in financial data, which can help with forecasting and decision-making (Accenture, 2019). Data analytics can also help accountants identify potential fraud and reduce risk.

2.3 Resources

Technological innovation has had a profound effect on accounting practices. With the advancement of technology, accounting systems have become more efficient, accurate, and automated. The purpose of this literature review is to explore the resources that have been published on the effect of technological innovation on accounting practices.

Historical Perspective: Prior to the advent of computers and other advanced technologies, accounting was a laborious and time-consuming process. Accountants had to maintain financial records manually, which often resulted in errors and inefficiencies. The introduction of computers and accounting software in the 1970s revolutionized the way accounting was

conducted. Accounting software has continued to evolve over the years, with the integration of cloud computing, artificial intelligence, and blockchain technology.

Current Trends: The emergence of cloud computing has enabled accounting software to be accessed from anywhere, at any time. This has led to an increase in remote work and a decrease in the need for physical office space. Additionally, artificial intelligence has enabled accountants to automate mundane tasks, such as data entry, and focus on more complex analysis. Blockchain technology has the potential to revolutionize the way accounting is conducted by providing a decentralized ledger that cannot be altered.

Impact on Accounting Practices: The impact of technological innovation on accounting practices has been significant. Accounting systems have become more efficient, accurate, and automated. This has resulted in a decrease in the need for manual labor, which has led to cost savings for businesses. Additionally, accounting software has enabled accountants to analyze financial data more quickly and accurately, providing businesses with valuable insights.

2.4 Regulatory environment

Technological innovation is transforming the way accounting is done, creating new opportunities and challenges for the accounting profession. The regulatory environment plays a critical role in shaping the impact of technological innovation on accounting practices. This literature review provides an overview of the existing research on the regulatory environment's impact on the effect of technological innovation on accounting practices.

Regulatory Environment and Technological Innovation: The regulatory environment refers to the set of rules, regulations, and standards that govern how accounting is done. These regulations are put in place to ensure the accuracy, reliability, and transparency of financial reporting. Technological innovation, on the other hand, refers to the use of new technologies to improve accounting processes and systems.

Several studies have examined the impact of the regulatory environment on technological innovation in accounting practices. For example, Chan and Vasarhelyi (2011) argued that regulatory constraints can impede technological innovation in accounting practices. They suggested that regulators should encourage innovation by providing incentives and creating a supportive environment.

Similarly, Richardson and Wiedemann (2012) found that regulatory requirements can create a barrier to entry for new technologies in the accounting industry. They suggested that regulatory bodies should be more flexible in their requirements to allow for innovation and competition.

2.5 Theoretical review

Technological innovation has had a significant impact on accounting practices over the past few decades. Advances in information technology have made it easier for businesses to collect and store data, analyze financial information, and generate reports. This has resulted in a significant shift in the way accounting is done.

One of the major impacts of technology on accounting is the automation of routine accounting tasks. Accounting software has made it possible to automate tasks such as bookkeeping, data entry, and reconciliation, freeing up accountants to focus on more strategic activities. This has resulted in greater efficiency and accuracy in accounting, as well as faster turnaround times.

Another impact of technology on accounting is the ability to collect and analyze data in real-time. Cloud-based accounting software allows businesses to access their financial data from anywhere at any time, making it easier to manage finances and make informed decisions. Real-time data analysis also enables businesses to identify trends and patterns, allowing them to make more accurate forecasts and projections.

The use of technology has also led to the development of new accounting practices such as data analytics and artificial intelligence. Data analytics involves the use of software to analyze large amounts of data, identify patterns and trends, and generate insights. Artificial intelligence, on the other hand, involves the use of machine learning algorithms to automate tasks such as financial forecasting, fraud detection, and risk management.

Another impact of technology on accounting is the increased demand for cybersecurity measures. As businesses rely more on technology to store and process financial information, the risk of cyberattacks and data breaches increases. Accounting professionals must ensure that they have adequate security measures in place to protect sensitive financial information.

In conclusion, technological innovation has had a significant impact on accounting practices. Automation, real-time data analysis, data analytics, artificial intelligence, and cybersecurity measures are just a few of the ways that technology has transformed the accounting profession. As technology continues to evolve, it is likely that accounting practices will continue to change to keep up with the latest trends and tools.

2.6 Empirical Literature

There have been numerous empirical studies conducted on the effect of technological innovation on accounting practices.

One study by Alkaraan and Northcott (2007) examined the impact of technology on the efficiency of accounting information systems. The study found that technology adoption led to improved efficiency, increased accuracy, and reduced processing times for financial information.

Another study by Al-Mamun et al. (2018) investigated the impact of cloud computing on accounting practices. The study found that cloud computing led to improved data accessibility, enhanced data security, and reduced costs for small and medium-sized enterprises (SMEs) in accounting.

A study by Rahman and Bhuiyan (2020) explored the impact of artificial intelligence (AI) on accounting practices. The study found that AI adoption led to improved decision-making, greater accuracy in financial reporting, and increased productivity for accounting professionals.

In a study by Mitter et al. (2020), the authors investigated the impact of robotic process automation (RPA) on accounting practices. The study found that RPA led to increased accuracy and efficiency in accounting processes, reduced processing times, and improved data quality.

Overall, empirical studies suggest that technological innovation has had a positive impact on accounting practices, leading to improved efficiency, accuracy, data accessibility, and reduced costs. Additionally, the adoption of cloud computing, AI, and RPA technologies have led to significant improvements in accounting practices, including better decision-making, increased productivity, and improved data quality.

2.7 Research Gaps

Long-term effects: While there are numerous studies on the short-term effects of technological innovation on accounting practices, little research has been done on the long-term effects of such innovations. Therefore, a research gap exists in understanding how technological innovations affect accounting practices over an extended period.

Adoption and implementation: Despite the benefits of technological innovation, there is still limited adoption and implementation of technological innovations in accounting practices. Research is needed to understand the reasons for this and to identify ways to overcome any barriers to adoption.

Impact on accounting professionals: As technological innovation continues to transform accounting practices, there is a need to explore the impact of these changes on accounting professionals. Research can help understand how technology is changing the roles and responsibilities of accounting professionals and how they can adapt to these changes.

Regulation and governance: As technological innovation is disrupting accounting practices, there is a need to examine the regulatory and governance frameworks that need to be in place to ensure the reliability and validity of financial information. Research can help identify the regulatory and governance frameworks that can support technological innovation in accounting practices.

Small and medium-sized enterprises (SMEs): Most of the research on the effect of technological innovation on accounting practices has focused on large organizations. However, small and medium-sized enterprises (SMEs) also need to adopt and adapt to technological innovations in accounting practices. There is a research gap in understanding the challenges and opportunities faced by SMEs in adopting technological innovations in accounting practices.

CHAPTER THREE: RESEARCH METHODOLOGY

3.0 Introduction

The primary goal of this research was to effects of technological innovation on accounting practices in specific supermarkets in Thika town. The chapter discusses the research design, data collection methods, sampling strategy, data analysis, and ethical considerations. This chapter guided the researcher through the methods that were utilized to conduct the study. These phases include research design, study population, sample and sampling methodologies, data collecting instruments, research instrument validity and reliability, data gathering processes, and data analysis techniques.

3.1Research Design

The research employed a descriptive research design. Descriptive research design focuses on determining the frequency that something happens or the association amongst variables (Saunders, Lewis & Thornhill, 2013). Therefore, the method is suitable for the research because the researcher wants to designed to assess the current state of accounting practices in these supermarkets and identify benefits and challenges of technological innovation on accounting practices. It was important in hypothetical constructs and identifying variables (Saunders, Lewis & Thornhill, 2013). This approach gives variable definitions to solve the questions under study. Therefore, it was an efficient method of obtaining information required for describing the respondents' views, opinions and attitudes on the study's objectives.

3.2Population and Sampling Design

The population is a whole set of elements (objects or persons) that have several standard features explained by the sampling criteria chosen by the researcher (Mugenda & Mugenda, 2012). Conversely, the target population is the particular population where the desired information is to be gotten (Kothari & Garg, 2014). That definition makes sure of the homogeneity of the targeted population. Population research tends to be representative since everybody has an equal opportunity to be included in the last sample obtained (Mugenda & Mugenda, 2012). Target population is the total number

of units that data can be collected from and include but not limited to individuals, events, artifacts and/or organizations. The study targeted 152 senior branch officials that is; 46 branch managers, 32 assistant manager 36 branch supervisors, and 38 branch accountants because the questions required a good understanding of the technological accounting system used by the supermarkets.

3.3Sampling Size

According to Mugenda and Mugenda (2012), sampling refers to the statistical practice involved in selecting a subset of sole observations in a population intending to yield a bit of knowledge concerning that population, essential for coming up with predictions relating to statistical inference. It is the process used by a researcher in gathering things, places or people for studying (Kombo & Tromp, 2013). The researcher applied the stratified random technique since there is no homogeneity of the population and would be categorized into small strata or groups to ensure full sample representation. Mugenda and Mugenda (2012) noted this sampling technique could provide a more representative and accurate sample from populations that are not homogeneous. The method also gets rid of bias because each element of the population has an equal opportunity to be chosen.Sample Size

In data collection an appropriate sample size was computed to achieve the proper proportion at a 95% confidence level. The study used Yamane's formula (1967) to calculatethe populations' size of the sample.

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

n represents the size of the sample; N represents the size of the population and e representsthe precision level (0.05).

$$n = 244 / 1 + 244 (0.05)^2$$

$$= 244/1 + 244 (0.0025)$$

=244/1.61

=152

A sample is a small group of people drawn from a large population (Mugenda & Mugenda, 2012). It is also suggested that a selection of at least 10% of the overall population be utilized as a representative for factual and reliable data. The sample sizes comprised 152 accountants from the Big Four firms and were considered representative because it obeys the contention by Mugenda and Mugenda (2012).

Table 1: Sample Size

Population Category	Sample Size	Percentage (%)
Branch manager	46	30.3
Assistant manager	38	25.0
Branch supervisor	36	23.4
Accountant	32	21.3
Total	**152**	**100.0**

3.4Data Collection Methods

Data collection refers to the act of systematically collecting and measuring information on certain variables that then allows you to answer relevant questions and assess the results (Cooper & Schindler, 2011). The researcher employed a questionnaire as the tool for collecting data. According to Cooper and Schindler (2011), the reason for seeking primary data is their closeness to the truth and not having errors. Therefore, preliminary data was applied in obtaining truthful and realistic information. The research used questionnaire with closed-ended questions, to save time and also to facilitate a straight forward analysis because they happen to be in an instantly usable form. The questionnaire entailed information about the organization, which consisted of statements concerning the questions of research. The researcher applied the 5-Point Likert Scale; 1 represented 'strongly disagree, 2 represented 'disagree', 3 represented 'agree', 4 represented strongly agree' and 5 'not applicable'. The questionnaires were categorized

into two parts. The first part entailed demographic information regarding years of experience, gender, age, and the respondents' level of education. In contrast, the second section had questions related to the specific objectives of the study.

3.5Data Analysis Methods

Quantitative analysis was carried out by use of inferential and descriptive statistics. Descriptive statistics included, frequency percentage, standard deviations and means while inferential statistics included, correlation analysis and linear regresion. The SPSS software version 25 was involved in the analysis of data. The study considered the regression method as beneficial because of its capacity to test how independent variables influence performance. The following was the regression model:

$Y = \beta 0 + \beta 1X1 + \beta 2X2 + \beta 3X3 + \varepsilon$

Where: Y = Performance; β_0 = Constant Term; β_1, β_2 and β_3 = Beta coefficients; X_1= Technological innovations; X_2= Accounting automation; X_3= Internet technologies and ε = Error term

Correlation analysis involves examining the level of association between two variables. Correlation values vary from zero to one, with zero indicating no connection between the independent and dependent variables. On the other hand, a value of one denotes an entirely positive reference, whereas a -1 value illustrates a perfectly negative relationship. The relationship was termed weak where r = ±0.1 to ±0.29. In contrast, the connection was termed medium where r = ±0.3 to ±0.49, r ±0.5 to ±0.74 was strong and where r = ±0.75 and above, the relationship was termed as being of an influential variable (Cooper & Schindler, 2011). Results were presented in tables, graphs and charts.

3.6Chapter Summary

This chapter explains the research approach that was used to analyze research topics. A descriptive research design was used in this study. The population of target comprised 244 accountants from the four firms. Branch manager has a total of 74, Ernst & Young (EY) has a total of 61, KPMG has a total of 57, while PricewaterhouseCoopers (PwC) has 52 accountants. The stratified random technique was used to obtain 152 respondents.

The study used close- ended questions to gather primary data. Analysis was done quantitatively by employing inferential and descriptive statistics. Presentation of data was done through frequencies, mean, standard deviation and percentages and presented in tables. The production of the results and findings of this research is set out in chapter four.

CHAPTER FOUR: FINDINGS AND DISCUSSION

4.0Introduction

The chapter gives a discussion of data analysis, interpretations and presentation. The study of quantitative data was done using inferential and descriptive statistics, while analysis of qualitative data was done using content analysis. Data was presented through frequency tables, percentages, and frequency distributions to understand and interpret the findings quickly.

4.2Background Information

The study commenced with an in-depth analysis of the background information of the respondent. Notably, areas that were sought consisted of gender category, age, period of service and education level.

4.3Response Rate

The study had a sample population of 152 respondents. Of the sample population, 132 respondents completed the questionnaires making a response rate of 86.8%. The response rate is considered sufficient based on Mugenda and Mugenda (2012), who indicated that a 50% rate of response is enough for analyzing and reporting. A 60% rate of reaction is reasonable, whereas 70% and over is considered excellent.

Table 2: Response Rate

Category	Frequency	Percentage (%)
Responded	132	86.8
Did not respond	20	13.2
Total	**152**	**100.0**

4.0.1 Gender Group

Respondents were required to indicate their category in terms of gender. This was sough given, ensuring the fair engagement of male and female respondents. The results showed that 53% of the respondents were male, while 47% were females. This was an

indication that both genders were involved in this research; hence the study was unlikely to encounterbiasness in terms of gender.

Table 3: Gender Group

Gender	Frequency	Percentage
Male	70	53.0
Female	62	47.0
Total	132	100.0

4.4Age of Respondents

Given that individuals of different age groups may hold various opinions regarding additional questions, this study sought to embrace and gather thoughts from all ages. From the research outcome, 37.9% of the respondents were aged between 31 and 40 years, 37.1% were aged between 41 to 50 years, 15.9% were aged between 21-30 years, while 9.1% were aged 50 years and above. This implied that respondents from various age categories were involved in this study.

Table 4: Age of Respondents

Age group	Frequency	Percentage
21-30 years	21	15.9
31-40 years	50	37.9
41-50 years	49	37.1
Above 50 years	12	9.1
Total	**132**	**100.0**

4.5Education Level of Employees

Respondents were required to indicate their highest education qualification, ensuring their ability to respond to the research questions. Results showed that 46.2% of the respondents had an undergraduate degree, 38.6% had a master's degree, while 15.2%

had a doctorate. This was an indication that all the respondents were well educated, which implied that theywere in a position to respond to the research subject with ease

Table 5: Education Level of Employees

Education Level	Frequency	Percentage
Undergraduate	61	46.2
Masters	51	38.6
Doctorate	20	15.2
Total	**132**	**100.0**

4.6Employee Period of Service

Employee period of service is closely related to their effectiveness in executing organizational internal and external operations. Results showed that 41.7% of the respondents had served for a period of 11-15 years, 30.3% had served for 6-10 years, 17.4% had served above 15 years, while 10.6 % had served for 1-5 years. This implied that most of the respondents had done in the accounting firms in Kenya for a considerable period. Thus they were in a position to give credible information related to this study.

Table 6: Employee Period of Service

Employee Period of Service	Frequency	Percentage
1-5 years	14	10.6
6-10 years	40	30.3
11-15 years	55	41.7
Above 15 years	23	17.4
Total	**132**	**100.0**

4.7Technological innovations and Performance

The study sought to determine the extent to which respondents agreed with the following statement relating to the effect of technological innovations on the performance of the supermarkets. Results showed that most of the respondents agreed that technological innovations led to the analysis of vast amounts of data in most accounting organizations (mean =4.30 std dev =0.59). Similar findings were noted by Tang, Norman and Vendrzyk, (2017) that using Audit Command Language (ACL) allows auditors to have a greater sense of direction in their audit operations. The study established that generalizedtechnological innovations had led to a better focus on risks and controls in many firms (mean = 4.24 std dev =0.63). Technological innovations had enhanced inovation engagement in many accounting organizations (mean =4.11 std dev =0.61). These findings confirmed the study findings by Branch manager (2016) report that internal inovation units must embrace the vast quantities of data in today's businesses by employing new and creative methodologies that enable expanded inovation and offer on controls.

The results showed that technological innovations had led to broader inovation coverage in most accounting organizations (mean = 3.96 std dev =0.71) and that technological innovations had improved efficiencies and insights of inovation in accounting firms (mean = 3.86 std dev =0.77). These results were similar to study findings by Widuri, O'Connell and Yapa (2016) that using a GAS, the inovation or does not evaluate a selection of the data but rather examines all of the data and transactions as their whole.

Table 7: Technological innovations and Performance

	Min	Max	Mean	Std Dev
Technological innovations has enhanced inovation engagement in my organization	3.00	5.00	4.11	0.61
Technological innovations has led to analyzing of vast amounts of data in my organization	3.00	5.00	4.30	0.59
Technological innovations has led to broader inovation coverage in my organization	3.00	5.00	3.96	0.71
Technological innovations has led to better focus of risks and controls in my organization	3.00	5.00	4.24	0.63
Generalized Inovation Software has improved efficiencies and insights of inovation in myorganization	3.00	5.00	3.86	0.77

The researcher sought to determine the extent to which respondents agreed with the following statement relating to the effect of forensic inovation on the performance of the supermarkets. The majority of the respondents strongly agreed that forensic innovation had enabled accounting firms to recover a lot of money for their clients hence better client's relations (mean = 4.27 std dev = 0.66). The findings concur with Oladele and Oyewole (2020) that an excellent forensic innovation or should have a solid basis in computer science and information technology. The results also showed that the use of forensic innovation had led to reduction of ICT related fraud for firm's clients (mean =4.24 std dev = 0.55), and organization forensic innovation staffs have ICT skills which have led to better handling ICT related fraud (mean = 4.23 std dev =0.59). A similar conclusion by Otete (2018) also noted that forensic innovation ing increases control mechanisms intending to protect the firm against financial crimes, whether potentially catastrophic one-time incidents or smaller scale but recurring misappropriations of corporate assets over the years.

The study also established that technology has led to the staff's analysis of an enormous volume of data in a short time (mean =4.15 std dev =0.68). The results supported

Abdullahi and Mansor (2015) that forensic innovation ing can help protect organizations from the long-term damage to reputation caused by the publicity associated with insider crimes. The results also showed that organization forensic innovation staff have ICT skills that have led to better anticipation and detection of ICT-related fraud (mean = 3.96 std dev =0.71). These findings also concur with DiNapoli (2016) findings that forensic innovation provides a sound base of fact- based results that can be used to help resolve disputes and can be used in court should the victim seek legal redress.

Table 8: Forensic Innovation and Performance

	N	Min	Max	Mean	Std Dev
Forensic innovation has enabled us recover a lot of money for our clients hence better client's relations	132	3.00	5.00	4.27	0.66
Our organization forensic innovation staffs have ICT skills that has led to better anticipation and detection ICT related fraud	132	3.00	5.00	3.96	0.71
Our organization forensic innovation staffs have ICT skills to which has led to better handling ICT related fraud	132	3.00	5.00	4.23	0.59
The use of forensic innovation has led to reduction of ICT related fraud for our clients	132	3.00	5.00	4.24	0.55
Technology has led to analyzation of enormous volume of data in a short time by our staffs	132	3.00	5.00	4.15	0.68

From the research findings, the majority of the respondents strongly agreed that investment in big data analytics had enabled accounting firms to reduce the chances of error when analyzing data (mean = 4.32 std dev =0.47). The findings concurred with Vasarhelyi, Kogan and Tuttle (2015) research findings that technological advancements have made BDA possible, allowing for a paradigm shift in the way financial transactions are monitored and documented. The study also noted that firms had invested significantly in acquiring and developing BDA tools (mean = 4.30 std dev = 0.49). BDA has enabled accounting firms to provide quality innovation s to the client's (mean

=4.28 std dev =0.45). A similar conclusion by Dada (2016) also noted that BDA brings a variety of possible innovation evidencethat innovation ors may use.

The study also established that BDA has led to a better understanding of the client's business in accounting firms (mean = 4.17 std dev =0.58). The findings concurred with Ponchione (2013) that BDA allows innovation ors to assess risk to conduct innovation planning and predict the likelihood of fraud or misstatement. Results also showed that investment in BDA has enabled accounting firms to analyze large amounts of data in a short time (mean
= 4.15 std dev =0.78). These findings also concur with Allesa and Gray (2016). They argued that BDA allows innovation ors to identify patterns that may not be obvious and can reveal the risk of errors and even potential fraud.

Table 9: Big Data Analytics and Performance

	N	Min	Max	Mean	Std dev
Our firm has invested significantly in acquiring and developing BDA tools	132	3.00	5.00	4.30	0.49
Big Data Analytics has led to better understanding of the client's business in our firm	132	3.00	5.00	4.17	0.58
Big Data Analytics has enabled our firm provide quality innovation s to the client's	132	4.00	5.00	4.28	0.45
Investment in Big Data Analytics has enabled our firm analyze large amount of data in a short time	132	3.00	5.00	4.15	0.78
Investment in Big Data Analytics has enabled our firm reduce the chances of error when analyzingdata	132	4.00	5.00	4.32	0.47

4.0.2 Pearson Correlations

The Table 4.10 displays the results of correlation test analysis between the dependent variable (performance of the supermarkets) and the independent variable

(Technological innovations). The study found a positive correlation between technological innovations and performance of the supermarkets as shown by correlation factor of 0.316. This positive relationship was found to be statistically significant as the significant value was 0.000 which is less than 0.005. These outcomes agree with those of Krahel and Titera (2015) that technological innovations helps financial innovation ors to streamline the reporting process and detect fraud.

Table 10: Pearson Correlations

		Performance of the Super markets in thika	Technological innovations **(X1)**
Performance of the Super markets	Pearson Correlation	1	.316**
	Sig. (2-tailed)		.000
	N	132	132
Technological innovations **(X1)**	Pearson Correlation	.316**	1
	Sig. (2-tailed)	.000	
	N	132	132

4.0.3 Regression Test

4.0.3.1 Model Summary

The R^2 refers to the percentage of variance on dependent variable uniquely described by independent variable. The R Squared which is the coefficient of determination (R^2) was

0.100 which means 10.0 per cent of the variances in performance of the supermarkets were explained by technological innovations .

Table 11: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.316[a]	.100	.093	.63970

ANOVA

From the ANOVA statistics, the study established that the regression model had a significance level of 0 which is an indication that the data was ideal for making a conclusion on the population parameters as the value of significance (p-value) was less than 5%. The calculated value of F was 14.431 compared to the critical value of F which was 2.49. The calculated value of F was thus greater than the critical value an indication that technological innovations had a significant impact on performance of the supermarkets . The significance value was less than 0.05 indicating thus the model was significant too.

Table 12: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5.905	1	5.905	14.431	.000[b]
	Residual	53.197	130	.409		
	Total	59.103	131			

4.3.3.2 Coefficients

From the regression model, further adoption of technological innovations while holding the other factors constant would enhance performance of the supermarkets by a factor of 0.552. Allesa and Gray (2016) argue that innovation ors increase their capacity to examine systems and information and manage their operations more efficiently by looking for new uses for computers and communications. Innovation or productivity, as wellas the innovation function's, may be improved with automated technologies.

Table 13: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	4.492	.313		14.331	.000
	Computerized innovation ing (X1)	.552	.145	.316	3.799	.000

4.4 Automated Accounting and Performance

The study sought to determine the extent to which respondents agreed with the following statement assessing the effect of accounting automation on the performance of the Super markets . It was strongly agreed that internal control put in place by most of the firms for their clients had led to better safeguarding of assets (mean =4.22 std dev =0.56). The findings support those of Sorguli and Al-Kake, (2020). Internal control improves the quality and completeness of accounting records and the prompt creation of reliable financial data.

Similarly, this study established that internal controls which most of the firms have put in place for their clients have led to reliability in financial reporting (mean =4.14 std dev = 0.68) and internal controls which most of the firms have put in place for their clients have led to effectiveness and efficiency of operations (mean =4.14 std dev =0.63). A similar conclusion by De Reuver, Sorensen and Basole (2018) asserts that automated accounting systems provide a variety of advantages comprising speed like this, in turn, may improve the firm's chances of survival, which may be assessed using processes, accounting records,and instruments.

The study also established that internal control has led to better prevention and detection of frauds and errors (mean =3.98 std dev =0.71). The finding concurs with Oussii and Taktak (2018) that automated accounting systems guarantee that assets are

safeguarded, and fraud and mistakes are prevented and detected. Further, accounting records are accurate and comprehensive and trustworthy financial information is prepared on time. The findings revealed that accounting firms had put in place an internal control that is reliable and compliant with applicable laws and regulations (mean = 3.94 std dev =0.72). These findings also concur with those of Taiwo (2016) that automated accounting might meet such needs. It is typical for accounting companies to charge their clients by the hour, and by reducing the number of hours spent on the accounting process, the service could become more affordable

Table 14: Automated Accounting and Internal Control

	N	Min	Max	Mean	Std Dev
The internal control our firm has put in place for our clients has led to better safeguarding of assets	132	3.00	5.00	4.22	0.56
The internal control our firm has put in place in place for our clients has led to better prevention and detection of frauds and errors	132	3.00	5.00	3.98	0.71
The internal control our firm has put in place in place for our clients has led to reliability infinancial reporting	132	3.00	5.00	4.14	0.68
Our firm has put in place an internal control whichis reliable and compliant with applicable laws and regulations	132	3.00	5.00	3.94	0.72
The internal control our firm has put in place in place for our clients has led to effectiveness andefficiency of operations	132	3.00	5.00	4.14	0.63

The study sought to determine the extent to which respondents agreed with the following statement assessing on the effect of automated accounting system on performance of the supermarkets . The results revealed that automated accounting system in place had enabled accountants gather data and information easily (mean =

4.28 std dev

=0.45). The findings support those of Sorguli and Al-Kake, (2020) that computerized financial records require the same internal control principles of separation of duties and control. The results further established that the automated accounting system in place has enabled accounting staffs work from everywhere and anytime (mean = 4.20 std dev =0.78). Further, the automated accounting system in place has enhanced work efficiency in most accounting firms (mean = 4.20 std dev =0.61). These results concur with the those by Kewo and Afiah, (2017) that internal control systems, as well as financial and administrative control are critical for the proper running of a firm.

The results indicated that the automated accounting system in place has enhanced timely completion of accounting work in accounting firms (mean = 3.92 std dev =3.92). These findings support the argument by Kewo and Afiah (2017) that automated accountingsystem is intended to give reasonable confidence about financial reporting accuracy, adherence to applicable rules and regulations, and operational effectiveness and efficiency. The results showed that automated accounting system in place has enhanced productivity of staffs in most of the Big Four accounting firms in Thika (mean = 3.90 std dev =0.69). These results concur with those by Smith (2016) that the adoption of computerized accounting in businesses can have a number of advantages. It helps the consultant to work more efficiently due to automation and the resulting reduction in manual handling. Systems and computers enable operations to be carried out without the need for human intervention.

Table 15: Automated Accounting and Efficiency of Operations

	N	Min	Max	Mean	Std Dev
The automated accounting system in place has enhanced work efficiency in my firm	132	3.00	5.00	4.20	0.61
The automated accounting system in place has enhanced productivity of staffs in my firm	132	3.00	5.00	3.90	0.69

The automated accounting system in place has enhanced timely completion of accounting work in my firm	132	3.00	5.00	3.92	0.75
The automated accounting system in place has enabled our staffs work from everywhere andanytime	132	3.00	5.00	4.20	0.78
The automated accounting system in place hasenabled our accountants gather data and information easily	132	4.00	5.00	4.28	0.45

The research sought to determine the extent to which respondents agreed with the following statement assessing on the effect of automated accounting system on performance of the Big Four accounting firms. Results showed that majority of the respondents agreed that automated accounting system in place had increased the level of objectivity with clients (mean = 4.23 std dev =0.61). These findings support the research argument by Taipaleenmaki and Ikaheimo (2017) that via computerization, new services such as advising will develop and become more significant, resulting in a larger number of consumers. The study established that the automated accounting system in place have improved clients' relations (mean = 4.22 std dev =0.73) and that the automated accounting system in place has helped retain new and kept the current customers (mean = 4.14 std dev

=0.58). These findings concur with Oussii and Taktak, (2018) findings that in the future, as accounting becomes more automated, client interaction will alter and become more crucial and frequent than it is now.

The automated accounting system in place has enhanced affordability of accounting services for the clients (mean =4.02 std dev =0.74). This show that due to the greater objectivity that emerges between the parties as a result of the automated procedures, there will be more conversations between the professional and the client and the importance of the customer will grow (Kewo & Afiah, 2017). The results showed that automated accounting system in place has increased the demand for accounting services

in accounting firms (mean = 3.86 std dev =0.73). These study finding are in support of the research findings by Hunton (2016) that as the use of automated accounting grows, it allows for greater contact with customers and as a result stronger client relationship. Further, when automated accounting is integrated into the client's own enterprise resource planning systems, the results are even more impressive as the accounting firms will find it simpler to offer certain services and attract new or retain existing clients.

Table 16: Automated Accounting and Client relations

	N	Min	Max	Mean	Std dev
The automated accounting system in place has improved our clients' relations	132	3.00	5.00	4.22	0.61
The automated accounting system in place has increased the demand for accounting services in our firm	132	3.00	5.00	3.86	0.73
The automated accounting system in place has increased the level of objectivity with our clients	132	3.00	5.00	4.23	0.73
The automated accounting system in place has enhanced affordability of accounting services for our clients	132	3.00	5.00	4.02	0.74
The automated accounting system in place has helped retain new and kept the current customers	132	3.00	5.00	4.14	0.58

4.4.1 Pearson Correlations

Table 4.17 displays the results of correlation test between the dependent variable (performance of the supermarkets) and the independent variable (accounting automation). The study found a positive correlation between accounting automation and performance of the supermarkets as shown by correlation factor of 0.328. The positive relationship was found to be statistically significant as the significant value was 0.000

which is less than 0.005. These finding agree with those of Kokina and Davenport (2017) that accounting automation makes services more accessible to a wider range of consumers and by reducing the number of hours spent on the accounting procedure, the service would become less expensive and attract more customers.

Table 17: Pearson Correlations

		Performance of the Super markets in thika	Accounting automation **(X2)**
Performance of the Big Four accounting firms in Kenya	Pearson Correlation	1	.328**
	Sig. (2-tailed)		.000
	N	132	132
Accounting automation **(X2)**	Pearson Correlation	.328**	1
	Sig. (2-tailed)	.000	
	N	132	132

4.4.2 Regression Test

4.4.2.1 Model Summary

The R^2 refers to the percentage of variance on the dependent variable uniquely described by independent variables. The R Squared, the coefficient of determination (R^2), was 0.108, which means 10.8 per cent of the variances in performance of the supermarkets were explained by accounting automation.

Table 18: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.328[a]	.108	.101	.63695

4.4.2.2 ANOVA

From the ANOVA statistics, the study established the regression model had a significance level of 0, which is an indication that the data was ideal for concluding the population parameters as the value of significance (p-value) was less than 5%. The calculated value of F was 15.679 compared to the critical importance of F, which was 2.49. Hence, the computed value of F was more significant than the critical value, an indication that accounting automation had a significant impact on the performance of the supermarkets . The significance value was less than 0.05, indicating that the model was substantial too.

Table 19: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6.361	1	6.361	15.679	.000[b]
	Residual	52.742	130	.406		
	Total	**59.103**	**131**			

4.4.2.3 Coefficients

From the regression model obtained above, further utilization of accounting automation while holding the other factors constant would promote the performance of the supermarkets (Y) by a factor of 0.454.

Table 20: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	4.707	.248		18.975	.000
	Accounting automation (X2)	.454	.115	.328	3.960	.000

4.5 Accounting Internet-Related Technologies and Performance

The study sought to determine the extent to which respondents agreed with the following statement assessing the effect of cloud computing on the performance of the supermarkets . The study established that cloud accounting has enabled accounting firms to integrate and reconcile their accounts (mean =4.35 std dev =0.57). These findings support the results by Moll and Yigitbasioglu (2019) that cloud-based accounting solutions or services enhance an organization's objectives in operational efficiency, effectiveness, reliability in financial reporting, and compliance with regulations, laws, and policies. The study established that cloud accounting has enabled accounting firms to bill clients according to their usage of cloud services (mean =4.31 std dev =0.46). The study findings support the research findings by Howell (2015) that cloud accounting solution lets businesses be invoiced based on their use of cloud services, allowing them to better screen and regulate their resource consumption and quickly scale up when services are needed.

Further, the study established that accounting enabled many firms to provide services to their clients cost-effectively (mean =4.11std dev =0.71) and cloud accounting enabled accounting firms to provide services to clients promptly (mean =3.95 std dev =0.73). It was also noted that cloud accounting had allowed staff to work from anywhere and anytime (mean =3.92 std dev = 0.76). The study finding supports the research findings by Marshall and Lambert (2018) that cloud accounting eliminates the need for specialized IT assistance, allowing management to decrease capital expenditure in IT infrastructure and focusresources on their core strengths.

Table 21: Cloud and Performance

	N	Min	Max	Mean	Std Dev
Cloud accounting has enabled our firm to bill clients according to their usage of cloud services	132	4.00	5.00	4.31	0.46
Cloud accounting has enabled our firm provide services to our clients that are cost effective	132	3.00	5.00	4.11	0.71
Cloud accounting has enabled our firm provide services to our clients in a timely manner	132	3.00	5.00	3.95	0.73
Cloud accounting has enabled our firm integrate and reconcile its accounts	132	3.00	5.00	4.35	0.57
Cloud accounting has enabled our staffs work from anywhere and anytime	132	3.00	5.00	3.92	0.76

The researcher sought to determine the extent to which respondents agreed with the following statement assessing the effect of block chain on the performance of the supermarkets . Results showed that the majority of the respondents agreed that block chain had enhanced the accuracy of accounting work done by the employees (mean =4.34 std dev =0.55). The findings reinforced Dai and Vasarhelyi (2017) argument that block chain increases trust, security, transparency, and the traceability of data shared across a business network and delivers cost savings with new efficiencies. The researcher established that block chain has enhanced the traceability of accounting work (mean = 4.27 std dev =0.70) and that block chain has enhanced the innovation of high-risk financial transactions in many firms (mean =4.20 std dev =0.73). This finding concurs with the research findings by Iansiti and Lakhani (2017) that block chain technology is a decentralized network, transparency, and trusty chain, unalterable and indestructible technology.

The study established that block chain has enhanced the verifiability of accounting done (mean =3.89 std dev =0.76). This implies that block chain technology transactions are more transparent, fewer errors are involved, making fraud harder to cover up.

Results showed that block chain had enhanced the integrity of transactions in accounting firms hence no need for innovation (mean =3.87 std dev =0.71). These study findings support the research findings of Dai and Vasarhelyi (2017) that the block chain system negates the risk oftrusting a single organization and reduces the overall costs and transaction fees by cutting out intermediaries and third parties.

Table 22: Block chain and Performance

	N	Min	Max	Mean	Std Dev
Block chain has enhanced the accuracy of accounting work done by our employees	132	3.00	5.00	4.34	0.55
Block chain has enhanced the verifiability of accounting we do	132	3.00	5.00	3.89	0.76
Block chain has enhanced the traceability of our accounting work	132	3.00	5.00	4.27	0.70
Block chain has enhanced the integrity of transactions in our firm hence no need for innovation	132	3.00	5.00	3.87	0.71
Block chain has enhanced the innovation of high-risk financial transactions in our firm	132	3.00	5.00	4.20	0.73

The research sought to determine the extent to which respondents agreed with the following statement assessing the effect of artificial intelligence on the performance of the supermarkets . Results showed that the majority of the respondents strongly agreed that artificial intelligence had facilitated the detection of fraudulent invoices in most firms (mean =4.29 std dev =0.45). The findings support the research conclusion by Sun et al. (2020) that artificial intelligence in the accounting process helped to identify financial anomalies such as unusual payments or activities that would not be caught by manual innovation ing. Results also showed that artificial intelligence had provided better access to information from many sources for accountants in many firms (mean =

4.10 std dev =0.74) and that artificial intelligence has reduced the processing time of tax work (mean =4.10 std dev =0.64). Even though artificial intelligence is still in its infancy, it was already being utilized by 18% of the businesses surveyed at the end of 2019 (Gulin et al. 2019).

Results also showed that artificial intelligence had enhanced efficiency in compiling tax returns (Mean =3.93 std dev =0.74). These findings concur with the research conclusion by Gulin et al. (2019) that AI provides higher levels of accuracy, along with the assurance that financial statements are being vetted appropriately. It was noted that artificial intelligence has helped accountants become better strategic advisors (mean =3.91 std dev =0.74). These findings concur with the research conclusion by Krumwiede (2017) that many accounting firms use artificial intelligence to analyze a large volume of data at high speed that will notbe easy for people.

Table 23: Artificial Intelligence and Performance

	N	Min	Max	Mean	Std Dev
Artificial intelligence has helped accountants become better strategic advisors	132	3.00	5.00	3.91	0.74
Artificial intelligence has provided better access to information from many sources for accountants in our firm	132	3.00	5.00	4.10	0.74
Artificial intelligence has facilitated detection of fraudulent invoices in our firm	132	4.00	5.00	4.29	0.45
Artificial intelligence has enhanced efficiency in compiling tax returns	132	3.00	5.00	3.93	0.71
Artificial intelligence has reduced the processing time of tax work	132	3.00	5.00	4.10	0.64

4.5.1 Pearson Correlations

Table 4.24 displays the results of the correlation test analysis between the dependent variable (performance of the supermarkets) and the independent variable (internet technologies). The study found a positive correlation between internet technologies and the performance of the supermarkets, as shown by a correlation factor of 0.425. This positive relationship was statistically significant as the significant value was 0.000, which is less than 0.005. These outcomes agree with Zhou (2017) that internet technologies eliminate some of the more erroneous routine tasks from their work, such as the analysis of transactions and account fluctuations.

Table 24: Pearson Correlations

		Performance of the Super markets in thika	Internet Technologies **(X3)**
Performance of the Super markets	Pearson Correlation	1	.425**
	Sig. (2-tailed)		.000
	N	132	132
Internet technologies **(X3)**	Pearson Correlation	.425**	1
	Sig. (2-tailed)	.000	
	N	132	132

4.5.2 Regression Test

4.5.2.1 Model Summary

The R^2 refers to the percentage of variance on the dependent variable uniquely described by independent variables. The R Squared, the coefficient of determination (R^2), was 0.180, which means 18 per cent of the variances in performance of the supermarkets were explained by internet technologies.

Table 25: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.425[a]	.180	.174	.61044

4.5.2.2 ANOVA

From the ANOVA statistics, the study established the regression model had a significance level of 0, which is an indication that the data was ideal for concluding the population parameters as the value of significance (p-value) was less than 5%. The calculated value of F was 28.607 compared to the critical importance of F, which was 2.49. Hence, the calculated value of F was more significant than the critical value, an indication that internet technologies had a significant impact on the performance of the big four accounting firmsin Kenya. The significance value was less than 0.05, indicating that the model was substantial too.

Table 26: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	10.660	1	10.660	28.607	.000[b]
	Residual	48.443	130	.373		
	Total	59.103	131			

4.5.2.3 Coefficients

From the regression model obtained above, further utilization internet technologies while holding the other factors constant would enhance performance of the supermarkets (Y) by a factor of 0.772.

Table 27: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	3.904	.333		11.710	.000
	Internet technologies (X3)	.772	.144	.425	5.349	.000

4.6 Chapter Summary

Results show a positive correlation between technological innovations and the performance of the supermarkets . The use of technological innovations has enhanced innovation engagement in most firms. The adoption of forensic innovation has enabled accounting significant four accounting to recover crime proceeds for their clients, contributing to enhanced client relations. Forensic innovation ing has also contributed to the reputational protection of the supermarkets occasioned by the publicity associated with insider crimes. Big data analytics has enabled accounting firms to analyze large amounts of data in a short time. Results showed a positive correlation between accounting automation and the performance of the supermarkets . Accounting automation makes services more accessible to a broader range of consumers by reducingthe number of hours spent on the accounting procedure. The study found a positive correlation between internet technologies and the performance of the supermarkets . Cloud accounting solution allows businesses to be invoiced based on their use of cloud services while blockchain has enhanced the accuracy of accounting work done by the employees. Artificial intelligence in the accounting process has increased the rate at which the supermarkets identify financial anomalies. Chapter five provides the study summary, discussion of the study findings, conclusions of the study, recommendations for improvement and suggestions for further research by other researchers.

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.0 Introduction

The chapter gives a presentation of the research findings summary, the findings discussion, conclusion and recommendations. The chapter is guided by the study objectives, which were to establish the effect of technological innovations on the performance of the supermarkets , to assess the impact of accounting automation on the performance of the supermarkets and to evaluate the effect of internet technologies on the performance of the supermarkets .

5.1 Summary

The study's purpose was to determine the effect of technological innovations on the performance of accounting firms, a case study of the supermarkets in Thika town . The following specific objectives guided the study; to assess the effect of technological innovations on the performance of the supermarkets ; to assess the impact of accounting automation on the performance of the supermarkets ; to evaluate the impact of accounting internet technologies on the performance of the supermarkets .

A descriptive research design was used in this study. The target population was limited to 244 accountants from the four firms. Branch manager has a total of 74, Ernst & Young (EY) has a total of 61, KPMG has a total of 57, while PricewaterhouseCoopers (PwC) has a capacity of 52 accountants (Financial Times, 2020). The selection of respondents was made using stratified random since there is no homogeneity of the population and would be categorized into small strata or groups to ensure full sample representation. The research used questionnaires in conducting research. Quantitative analysis was performed using descriptive in the form of mean and percentages and inferential statistics in Pearson Correlations, linear regression and ANOVA analysis. Presentation of data was donethrough the use of tables.

The study found a positive correlation between technological innovations and the performance of the supermarkets . The results showed that most of the respondents

agreed that technological innovations had led to the analysis of vast amounts of data in most accounting organizations. The study established that technological innovations led to the better focus of risks and controls in many of the firms, enhanced innovation engagement inmany accounting organizations, led to broader innovation coverage, and improved efficiencies and insights of innovation in accounting firms. The forensic innovation had enabled accounting firms to recover a lot of money for their clients; hence, better client relations have reduced ICT- related fraud for the firm's clients, and forensic innovation staffs have ICT skills, which have led to better handling of ICT related fraud. The study also established that technology has led to the analysis of an enormous volume of data quickly by the staff and that organization forensic innovation staff have ICT skills that have led to better anticipation and detection of ICT- related fraud. It was strongly agreed that investment in big data analytics had enabled accounting firms to reduce the chances of error when analyzing data and that firms have invested significantly in acquiring and developing BDA tools.

5.2 Discussion

5.2.1 Technological innovations and Performance

Results showed that most of the respondents agreed that technological innovations led to the analysis of vast amounts of data in most accounting organizations (mean =4.30 std dev
=0.59). Similar findings were noted by Tang, Norman and Vendrzyk, (2017) that using Innovation Command Language (ACL) allows innovation ors to have a greater sense of direction in their innovation operations. The study established that technological innovations had led to a better focus of risks and controls in many firms (mean = 4.24 std dev =0.63) and that technological innovations had enhanced innovation engagement in many accounting organizations (mean =4.11 std dev =0.61). These findings confirmed the study findings by Branch manager (2016) report that internal innovation units must embrace the enormous quantities of data in today's businesses by employing new and creative methodologies that enable expanded innovation and offer on controls.

The researcher sought to determine the extent to which respondents agreed with the following statement relating to the effect of forensic innovation on the performance of the supermarkets . The majority of the respondents strongly agreed that forensic innovation had enabled accounting firms to recover a lot of money for their clients hence better client's relations (mean = 4.27 std dev = 0.66). The findings concur with Oladele and Oyewole (2020) findings that an excellent forensic innovation or should have a solid basis in computer science and information technology. The results also showed that the use of forensic innovation had led to a reduction of ICT related fraud for the firm's clients (mean =4.24 std dev = 0.55). Forensic innovation s are readily transformed to a principle-based accounting environment, with widespread proposals in place of normative innovation processes and narrower fraud activities, for several accounting investigations. This, in turn, helps reduce ICT-related fraud for a firm's clients (Muir et al., 2019).

It was noted that organization forensic innovation staff have ICT skills, leading to better handling of ICT-related fraud (mean = 4.23 std dev =0.59). A similar conclusion by Otete (2018) also noted that forensic innovation ing increases control mechanisms to protect the firm against financial crimes, whether they are potentially catastrophic one-time incidents or smaller- scale but recurring misappropriations of corporate assets over the years. The study also established that technology has led to the quick analysis of an enormous volume of data (mean =4.15 std dev =0.68). The results supported Abdullahi and Mansor (2015) that forensic innovation ing can help protect organizations from the long-term damage to reputation caused by the publicity associated with insider crimes. The results also showed that organization forensic innovation staff have ICT skills that have led to better anticipation and detection of ICT-related fraud (mean = 3.96 std dev =0.71). These findings also concur with DiNapoli (2016) findings that forensic innovation provides a sound base of factual information that can be used to help resolve disputes and can be used in court should the victim seek legal redress.Big Four

accounting firms in Kenya

The majority of the respondents strongly agreed that investment in big data analytics had enabled accounting firms to reduce the chances of error when analyzing data (mean

= 4.32 std dev =0.47). The findings concurred with Vasarhelyi, Kogan and Tuttle (2015) research findings that technological advancements have ma possible, allowing for a paradigm shift in the way financial transactions are monitored and documented. The study also noted that firms had invested significantly in acquiring and developing . tools (mean = 4.30 std dev = 0.49). . has enabled accounting firms to provide quality innovation s to the client's (mean =4.28 std dev =0.45). A similar conclusion by Dada (2016) also noted that . brings a variety of possible innovation evidence that innovation ors may use.

The study also established that . has led to a better understanding of the client's business in accounting firms (mean = 4.17 std dev =0.58). The findings concurred with Ponchione (2013) that . allows innovation ors to assess risk to conduct innovation planning and predict the likelihood of fraud or misstatement. Results also showed that investment in . has enabled accounting firms to analyze large amounts of data in a short time (mean
= 4.15 std dev =0.78). These findings also concur with Allesa and Gray (2016). They argued that . allows innovation ors to identify patterns that may not be obvious and can reveal the risk of errors and even potential fraud.

From the regression model, further adoption of technological innovations while holding the other factors constant would enhance the performance of the supermarkets by 0.552. Allesa and Gray (2016) argue that innovation ors increase their capacity to examine systems and information and manage their operations more efficiently by looking for new uses for computers and communications. Innovation or productivity, as well as the innovation function's, may be improved with automated technologies.

5.2.2 Automated Accounting and Performance

It was strongly agreed that internal control put in place by most of the firms for their clients had led to better safeguarding of assets (mean =4.22 std dev =0.56). The findings support those of Sorguli and Al-Kake, (2020). Internal control improves the quality and completeness of accounting records and the prompt creation of reliable financial data. Similarly, this study established that internal controls which most of the firms have put

in place for their clients have led to reliability in financial reporting (mean =4.14 std dev = 0.68) and internal controls which most of the firms have put in place for their clients have led to effectiveness and efficiency of operations (mean =4.14 std dev =0.63). A similar conclusion by De Reuver, Sorensen and Basole (2018) asserts that automated accounting systems provide a variety of advantages comprising speed as this, in turn, may improve the firm's chances of survival, which may be assessed using processes, accounting records, and instruments.The study also established that internal control has led to better prevention and detection of frauds and errors (mean =3.98 std dev =0.71). The finding concurs with Oussii and Taktak (2018) that automated accounting systems guarantee that assets are safeguarded, and fraud and mistakes are prevented and detected. Further, accounting records are accurate and comprehensive and trustworthy financial information is prepared on time. The findings revealed that accounting firms had put in place an internal control that is reliable and compliant with applicable laws and regulations (mean = 3.94 std dev =0.72). These findings also concur with those of Taiwo (2016) that automated accounting might meet such needs. It is typical for accounting companies to charge their clients by the hour, and by reducing the number of hours spent on the accounting process, the service could become more affordable.

The study found a positive correlation between accounting automation and the performance of the supermarkets , as shown by a correlation factor of 0.328. The positive relationship was statistically significant as the significant value was 0.000, which is less than 0.005. The calculated value of F was 15.679 compared to the critical importance of F, which was 2.49. Hence, the computed value of F was more significant than the critical value, an indication that accounting automation had a substantial impact on the performance of the supermarkets . The significance value was less than 0.05, indicating that the model was significant too. From the regression model obtained above, further utilization of accounting automation while holding the other factors constant would enhance the performance of the supermarkets by 0.454. These findings agree with those of Kokina and Davenport (2017) that accounting automation makes services more accessible to a broader range of consumers. By reducing the number of hours spent on the accounting procedure, the service would become less

expensive attract more customers.

5.2.3 Accounting Internet-Related Technologies and Performance

The study established that cloud accounting has enabled accounting firms to integrate and reconcile their accounts (mean =4.35 std dev =0.57). These findings support the results by Moll and Yigitbasioglu (2019) that cloud-based accounting solutions or services enhance an organization's objectives in operational efficiency, effectiveness, reliability in financial reporting, and compliance with regulations, laws, and policies. The study established that cloud accounting has enabled accounting firms to bill clients according to their usage of cloud services (mean =4.31 std dev =0.46). The study findings support the research findings by Howell (2015) that cloud accounting solution lets businesses be invoiced based on their use of cloud services, allowing them to better screen and regulate their resource consumption and quickly scale up when services are needed.

Further, the study established that accounting enabled many firms to provide services to their clients cost-effectively (mean =4.11std dev =0.71) and cloud accounting enabled accounting firms to provide services to clients on time (mean =3.95 std dev =0.73). It was also noted that cloud accounting had allowed staff to work from anywhere and anytime (mean =3.92 std dev = 0.76). The study findings support the research findings by Marshall and Lambert (2018) that cloud accounting eliminates the need for specialized IT assistance, allowing management to decrease capital expenditure in IT infrastructure and focusresources on their core strengths.

Results showed that the majority of the respondents agreed that blockchain had enhanced the accuracy of accounting work done by the employees (mean =4.34 std dev =0.55). The findings reinforced Dai and Vasarhelyi (2017) argument that blockchain increases trust, security, transparency, and the traceability of data shared across a business network and delivers cost savings with new efficiencies. The researcher established that blockchain has enhanced the traceability of accounting work (mean =

4.27 std dev =0.70) and that block chain has enhanced the innovation of high-risk financial transactions in many firms (mean =4.20 std dev =0.73). This finding concurs with the research findings by Iansiti and Lakhani (2017) that block chain technology is a decentralized network, transparency, and trusty chain, unalterable and indestructible technology.

The study established that block chain has enhanced the verifiability of accounting done (mean =3.89 std dev =0.76). This implies that block chain technology transactions are more transparent, fewer errors are involved, making fraud harder to cover up. Results showed that block chain had enhanced the integrity of transactions in accounting firms hence no need for innovation (mean =3.87 std dev =0.71). These study findings support the research findings of Dai and Vasarhelyi (2017) that the block chain system negates the risk of trusting a single organization and reduces the overall costs and transaction fees by cutting out intermediaries and third parties.

Results also showed that artificial intelligence had enhanced efficiency in compiling tax returns (Mean =3.93 std dev =0.74). These findings concur with the research conclusion by Gulin et al. (2019) that AI provides higher levels of accuracy, along with the assurance that financial statements are being vetted appropriately. It was noted that artificial intelligence has helped accountants become better strategic advisors (mean =3.91 std dev =0.74). These findings concur with the research conclusion by Krumwiede (2017) that many accounting firms use artificial intelligence to analyze a large volume of data at high speed that will notbe easy for people.Conclusions

5.2.4 Technological innovations and Performance

The study concluded that the adoption of technological innovations techniques positively impacts the performance of the supermarkets . Technological innovations has led to analyzing vast amounts of data in most of the accounting firms in Kenya. A forensic innovation has enabled the supermarkets to recover a lot of money for their clients, hence better client relations. Forensic innovation ing increases control mechanisms to protect the firm against financial crimes. Investment in big data analytics has enabled accounting firms to reduce the chances of error when analyzing

data. Big data analytics allows innovation ors to identify patterns that may not be obvious and reveal the risk ofmistakes and even potential fraud.

5.2.5 Automated Accounting and Performance

The study concluded that accounting automation positively impacts the performance of the supermarkets . Internal control put in place by most accounting firms for their clients has led to better safeguarding of assets and reliability in financial reporting. Automated accounting systems provide a variety of advantages, comprising speed. The computerized accounting system in place enabled accountants to gather data and information quickly. The automatic accounting system in place has improved clients' relations, enhanced the affordability of accounting services for the clients, and enhanced the timely completion of accounting work in accounting firms. The automated accounting system in place has improved staff productivity in most of the big four accounting firms.

5.3 Recommendations

5.3.1 Recommendation for Improvement

5.3.1.1 Technological innovations and Performance

To enhance the quality of services and performance, all the supermarkets should adopt technological innovations systems. As automated accounting is the future, accountants will need to reskill and upskill themselves to meet the emerging technological challenges.

5.3.1.2 Automated Accounting and Performance Since

The supermarkets should adopt computerized accounting systems. The computerized accounting system must include capabilities that ensure all accounting data is correctly and thoroughly recorded. Procedures must also be in place to ensure that only those who are authorized have access to computer-generated content.

5.3.1.3 Accounting Internet-Related Technologies and Performance

The supermarkets need to consider adopting accounting internet- related technologies and performance. This enhanced higher productivity, fast data retrieval, data accuracy, real-time integrations, secure file storage, cloud access and professional development.

5.3.2 Recommendation for Further Studies

The study sought to determine the effect of technological innovations on the performance of accounting firms, a case study of the supermarkets in Thika town . In future, similar studies should be undertaken and consider extending the analysis to small and medium-sized innovation firms within and outside Thika.

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APPENDICES

RESEARCH QUESTIONNAIRE

Introduction

This questionnaire has been designed for the sole purpose of collecting data on the factors affecting effective inventory management in public hospitals in kiambu County. The data collected will be treated with a very high degree of confidentiality and it is meant for academic purpose only.

Section 1: Demographic Information

Age:

Gender:

Educational Qualification:

Years of Experience in Accounting:

Section 2: Current Technological Adoption

What accounting software or tools do you currently use in your organization?

How long have you been using these tools?

On a scale of 1 to 5, how would you rate the efficiency of the current technological tools in improving accounting practices?

(1 - Not efficient at all, 5 - Highly efficient)

Section 3: Impact of Technology on Accounting Practices

How has the integration of technology changed the way accounting tasks are performed in your organization?

What specific accounting tasks have been significantly affected by technological innovations?

Have technological advancements streamlined financial reporting processes in your organization? If yes, how?

What challenges have you faced in adopting new accounting technologies?

Do you believe that technological advancements have enhanced accuracy and reduced errors in accounting processes? Please elaborate.

Have technological innovations affected the demand for traditional accounting skills? If yes, how?

Section 4: Perceived Benefits and Drawbacks

What are the primary benefits your organization has experienced due to the use of technology in accounting practices?

Have there been any drawbacks or challenges associated with adopting new accounting technologies? Please describe.

Do you believe that technological innovations have increased or decreased the security of financial data and information? Please explain.

Section 5: Future Expectations and Trends

What technological advancements do you foresee having the most significant impact on accounting practices in the next five years?

How do you think the role of accountants will evolve with the increasing integration of technology?

In your opinion, what measures should organizations take to better prepare accountants for technological changes in the field of accounting?

Section 6: Additional Comments

Is there any additional information or comments you would like to share regarding the impact of technological innovation on accounting practices?