

**THE RELATIONSHIP BETWEEN AUTOMATION AND REVENUE  
COLLECTION BY KENYA REVEUE AUTHORITY**

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**DECLARATION**

This research project is my original work and has not been submitted for degree award at the University of Nairobi or any other University



Signature..... Date: 20<sup>TH</sup> November, 2023

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D61/36378/2020

This research project has been submitted for examination with my approval as University Supervisor



Signature..... Date 25th November 2023

Dr. Kennedy Okiro

## **DEDICATION**

This project is dedicated to my late father Esmail Ahmed for his dedication and support extended to me when he was around.

## **ACKNOWLEDGEMENT**

I express my deepest appreciation and gratitude to all those who have contributed to the completion of my project. First and foremost, I extend my sincere thanks to my supervisor Dr. Okiro for his invaluable guidance and mentorship throughout the entire research process. His expertise, patience, and constructive feedback have been instrumental in shaping this project

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## ABSTRACT

The modernization of the global tax system has been driven by efforts to enhance the accountability and efficiency of taxation systems. Despite the implementation of iTax in Kenya, the Kenya Revenue Authority faces challenges in meeting its revenue targets. This study aimed to assess the five-year impact of iTax implementation on revenue collection in Kenya. Drawing on the Unified Theory of Acceptance and Use of Technology and Neo-Classical theory, the research utilized a longitudinal correlational design to investigate the effects of iTax. Analyzing secondary data from tax collections between 2012 and 2016 using event study methodology and quantitative statistical packages, significant changes in revenue patterns linked to iTax implementation were identified. Remarkably, iTax contributed to heightened variability in revenue returns, exerting a positive influence on average quarterly revenue collection. Specifically, the study noted no substantial difference in revenue collected in 2012 and 2013, signifying a stable pre-iTax period. However, during the iTax implementation phase, a noteworthy increase in revenue was observed, a trend that persisted post-implementation. Post-iTax, abnormal revenue exhibited a considerable rise ( $M=0.8460$  billion,  $SD=0.33091$ ) compared to the pre-iTax period ( $M=0.00001$ ,  $SD=0.17142$ ), emphasizing the favorable impact of iTax on revenue collection. In conclusion, the implementation of iTax has positively impacted revenue collection in Kenya, emphasizing the need for strategies to promote taxpayer adoption. The study recommends that the Kenya Revenue Authority concentrates on training and marketing initiatives to further boost iTax adoption, ensuring sustained revenue growth in the future.

## CHAPTER ONE: INTRODUCTION

### 1.1 Background of the Study

The Kenya Revenue Authority (KRA) plays a pivotal role in the economic development of Kenya by mobilizing revenue for the government's public expenditure. Efficient and effective revenue collection is essential for sustaining government activities, funding public services, and promoting overall economic growth (KRA, 2021). Internationally, many research studies have investigated the correlation between taxation, revenue generation, and economic progress. For example, Bird and Martinez-Vazquez (2008) conducted a study highlighting the significance of tax policy adjustments in improving revenue generation in developing nations, thus emphasizing the global importance of effective tax systems.

Regionally, within the African context, studies have investigated the challenges and opportunities faced by revenue authorities. In a study conducted by Mbogo and Kamau (2016) in the East African region, challenges related to tax evasion and inadequate tax administration were identified. Similarly, regional organizations such as the African Tax Administration Forum (ATAF) have been actively involved in research and policy advocacy to enhance revenue collection across African countries (ATAF, 2020). At the local level, studies focusing specifically on Kenya have delved into the intricacies of revenue collection mechanisms and their impact on the national economy. Nyamwange and Munyoki (2017) explored the role of technology in enhancing tax compliance among Kenyan businesses, highlighting the local implications of digital solutions in revenue collection. Furthermore, the Kenyan government's initiatives such as the implementation of iTax have been extensively studied. The study by Kinyanjui and Gakure (2015) examined the challenges faced during the initial phases of iTax implementation, offering valuable insights into the local dynamics of adopting technology in tax administration.

Understanding the interplay between international, regional, and local factors is crucial for comprehending the complexities of revenue collection in Kenya, especially in the Western Region. This study aims to build upon the insights provided by these international, regional, and local studies to analyze the specific challenges and opportunities faced by the Kenya Revenue Authority in the Western Region, focusing on the implementation and impact of iTax on revenue collection strategies.

### **1.1.1 Concept of iTax**

The introduction of iTax in Kenya signifies a transformative shift in tax administration, characterized by the integration of innovative digital solutions to streamline the process of revenue collection. Embracing technology in taxation has garnered substantial attention globally due to its ability to enhance efficiency, transparency, and adherence to tax regulations. International research has emphasized the significance of digital platforms in tax administration. For example, a study conducted by Alm and Torgler (2011) highlighted the favorable effects of electronic filing systems on tax compliance in developed countries, emphasizing the importance of user-friendly interfaces and accessibility. Regionally, in Africa, similar initiatives to iTax have been introduced to modernize tax systems. The African Tax Administration Forum (ATAF) has actively promoted the use of technology in revenue collection across African countries (ATAF, 2018). Their research and policy recommendations have influenced the adoption of digital platforms, including iTax, in various African nations, aligning with the broader regional efforts toward efficient tax administration.

At the local level, within Kenya, the introduction of iTax marked a significant milestone in tax reform. The system was implemented by the Kenya Revenue Authority (KRA) to provide taxpayers with a user-friendly online platform for tax compliance. Local research has investigated the effects of iTax on revenue collection and taxpayer conduct. Mwangi's study

(2016) delved into the hurdles encountered by small and medium-sized enterprises (SMEs) when adopting iTax, offering insight into the specific obstacles to digital tax compliance at a local level. Additionally, KRA's own reports and publications provide valuable insights into the design and functionality of iTax, offering a comprehensive understanding of the local implementation of the system (KRA, 2019).

The concept of iTax in Kenya reflects a paradigm shift in revenue collection, emphasizing the importance of digitalization and user experience. By examining international best practices, regional initiatives, and local studies, this research aims to provide a nuanced analysis of iTax implementation in Kenya, with a specific focus on the Western Region. Understanding the challenges and successes associated with iTax adoption will contribute to the broader discourse on digital tax administration, offering valuable lessons for policymakers, tax authorities, and taxpayers alike.

### **1.1.2 Itax Influence on Revenue Collection**

The adoption of iTax in Kenya has significantly transformed the process of revenue collection, revolutionizing traditional tax administration by integrating digital technology. The global context emphasizes the significance of technology in tax collection. Internationally, studies by Tanzi (2017) and Smith (2019) underline the pivotal role of digital platforms in enhancing revenue collection efficiency and reducing tax evasion. These international perspectives emphasize the need for countries to embrace technological advancements to bolster their revenue mobilization efforts.

Regionally, in Africa, initiatives similar to iTax have been instrumental in shaping tax policies and administration. The African Tax Research Network (ATRN) conducted a comprehensive study on the impact of digital taxation on revenue collection in African countries (ATRN,

2020). Their findings shed light on the regional challenges and opportunities associated with the adoption of digital platforms in tax collection. Additionally, regional collaborations facilitated by organizations such as the East African Community (EAC) have enabled knowledge sharing and capacity building in digital tax administration (EAC, 2018).

Locally, in Kenya, the introduction of iTax has provided valuable insights into strategies for revenue collection. According to KRA's annual reports (KRA, 2022), comprehensive analyses of the influence of iTax on tax compliance rates, revenue generation, and the overall efficiency of tax administration have been documented. Local studies, such as the research conducted by Omondi (2021), have delved into the specific challenges faced by taxpayers and tax authorities in the adoption and utilization of iTax, providing crucial feedback for system refinement.

The integration of iTax into Kenya's revenue collection framework represents a significant leap toward a more efficient and transparent tax system. By analyzing international best practices, regional initiatives, and local challenges, this research seeks to provide a comprehensive understanding of iTax's role in revenue collection in the Western Region. By drawing on these diverse perspectives, this study aims to contribute valuable insights for policymakers, tax authorities, and researchers, offering practical recommendations to enhance the effectiveness of iTax in revenue mobilization efforts.

### **1.1.3 Kenya Revenue Authority**

The Kenya Revenue Authority (KRA) stands as the principal revenue collection agency in Kenya, responsible for mobilizing revenue for the government. Established in 1995 under the Kenya Revenue Authority Act, the organization operates under the Ministry of Finance. The

KRA's core mandate includes tax assessment, collection, and enforcement of tax laws. Its functions are vital for financing public expenditures, fostering economic development, and ensuring the effective functioning of public services in the country (KRA, 1995). In recent years, KRA has undergone significant transformations to enhance its efficiency and effectiveness. The introduction of innovative initiatives, such as iTax, marked a pivotal moment in the organization's modernization journey. iTax, launched in 2013, aimed to simplify tax processes, increase compliance, and streamline revenue collection mechanisms (KRA, n.d.). Through iTax, KRA sought to create a digital platform allowing taxpayers to file returns, make payments, and access various tax services online. This digital shift aligned with global trends in tax administration, emphasizing the importance of technology in enhancing revenue collection efficiency (KRA, 2013).

The success of iTax is intricately linked to its adoption by taxpayers, businesses, and other stakeholders. Understanding taxpayer behaviour and their acceptance of iTax is crucial for KRA to refine its strategies and ensure the sustainability of revenue collection efforts. As such, evaluating the impact of iTax on revenue collection in specific regions, such as the Western Region of Kenya, provides valuable insights into the effectiveness of KRA's initiatives and informs future policy decisions (KRA, 2013).

## **1.2 Research Problem**

The implementation of digital tax platforms, such as iTax, has been regarded as a progressive step towards modernizing revenue collection systems globally. Internationally, studies by Kumar and Pandey (2019) and Lee and Kim (2020) have explored the challenges faced by taxpayers in adapting to digital tax systems, emphasizing the importance of user experience and digital literacy. These international perspectives raise questions about the usability and

accessibility of iTax for diverse user groups, considering the varying levels of technological familiarity and digital infrastructure across different countries. Regionally, within Africa, the adoption of digital tax platforms has encountered unique challenges. Research by Tadesse (2018) on the digitalization of tax systems in African countries revealed issues related to internet connectivity, cybersecurity, and the digital divide. These regional challenges raise concerns about the effective implementation of iTax in Kenya, particularly in regions with limited access to digital resources and internet connectivity.

At the local level, within Kenya, the implementation of iTax has faced specific hurdles. Studies such as the research conducted by Kamau (2021) highlighted the concerns of small business owners regarding the complexity of the iTax interface and the lack of personalized support from tax authorities. Studies conducted within the local context emphasize the necessity for customized solutions and efficient support systems to tackle the obstacles encountered by taxpayers, especially small and medium-sized enterprises (SMEs), during the implementation of iTax in Kenya. The research problem, therefore, centers on the usability, accessibility, and support structures associated with iTax, particularly in the Western Region of Kenya. It addresses the overarching question: How do the usability challenges, limited accessibility, and lack of personalized support impact the effective adoption and utilization of iTax among taxpayers, especially SMEs, in the Western Region? By understanding these challenges at the international, regional, and local levels, this study aims to identify practical solutions and policy recommendations to enhance the user experience, accessibility, and support mechanisms of iTax in the Western Region, ultimately contributing to more inclusive and effective digital tax administration strategies.



### **1.3 Research Objectives**

To investigate the relationship between revenue collection before and after iTax implementation in Kenya

### **1.4 Value of the Study**

The significance of current research lies in its contribution to addressing pressing issues in the realm of digital tax administration, drawing insights from international, regional, and local contexts. Internationally, research by Tan and Tyler (2019) emphasized the importance of user-centric design in digital tax platforms, indicating that user satisfaction significantly influences tax compliance. This international perspective underscores the relevance of our study in evaluating iTax's user experience and its impact on taxpayer behavior, providing valuable insights for tax authorities worldwide. Regionally, within Africa, the study by Akinyemi et al. (2020) explored the role of digital literacy in enhancing tax compliance in Nigeria. By aligning with this regional research, our study aims to contribute to the broader discourse on digital tax literacy and its implications for revenue collection strategies in African nations.

At the local level, within Kenya, research conducted by Ndung'u (2022) delved into the challenges faced by SMEs in adopting digital tax systems, highlighting the need for localized support mechanisms. Our study builds upon this local insight, to offer region-specific recommendations that can be directly implemented by the Kenyan Revenue Authority to enhance iTax usability and accessibility. Moreover, this study holds practical value for policymakers, tax authorities, and businesses in Kenya. By identifying specific challenges faced by taxpayers, especially SMEs, in Kenya.

## **CHAPTER TWO: LITERATURE REVIEW**

### **2.1 Introduction**

This literature review examines the current knowledge base regarding digital tax systems. Its purpose is to lay the groundwork for a thorough investigation of the implementation of iTax in Kenya. By synthesizing the findings of other studies, this chapter lays the foundation for understanding the complexities of digital tax platforms, guiding the subsequent analysis of theoretical frameworks and empirical evidence in the context of this research study. By examining the extensive research conducted in this field, this review aims to unravel the intricate factors influencing the adoption and effectiveness of digital tax platforms, with a specific focus on iTax implementation and revenue collection strategies in Kenya.

### **2.2 Theoretical Review**

In this section, the review encompasses the neo-classical theory and the unified theory of acceptance and use of technology as the primary theories associated with the focus of this study.

#### **2.2.1 Neo Classical Theory**

The Neo-Classical Theory, a fundamental economic theory, postulates that individuals act rationally to maximize their utility by making informed decisions based on costs and benefits. In the context of taxation, this theory suggests that taxpayers make rational choices regarding tax compliance, aiming to minimize their tax liability while maximizing their disposable income (Allingham & Sandmo, 1972). This rational decision-making process becomes pivotal in understanding taxpayer behavior and compliance patterns, especially concerning digital tax platforms such as iTax.

Research by James and Alley (2002) explored individual taxpayers' rational decision-making processes in the context of electronic tax filing systems. Their findings highlighted the significance of taxpayers' cost-benefit analyses in determining the adoption and usage of digital tax platforms, aligning with the principles of Neo-Classical Theory. In a study conducted by Aworawo and Adegbe (2012) in Nigeria, the researchers examined the rational choices made by taxpayers regarding e-tax systems. Their research emphasized the role of perceived benefits and costs in shaping taxpayers' decisions to engage with digital tax platforms, corroborating the Neo-Classical Theory's relevance in regional contexts.

A study by Kipkorir and Ndiema (2014) explored the rational behavior of Kenyan taxpayers, emphasizing the importance of taxpayers' perceptions of fairness, equity, and efficiency in their compliance decisions. This local research aligns with the Neo-Classical Theory's principles, demonstrating the theory's applicability in understanding taxpayer behavior within the Kenyan context. The Neo-Classical Theory's relevance to this study lies in its foundational principles, providing a theoretical framework to analyze taxpayer behavior concerning iTax adoption and usage. By understanding taxpayers' rational decision-making processes, this study aims to gain insights into the factors influencing iTax adoption in the Western Region of Kenya, contributing to a nuanced understanding of digital tax compliance within the framework of Neo-Classical Theory.

### **2.2.2 The Unified Theory of Acceptance and Use of Technology**

The Unified Theory of Acceptance and Use of Technology (UTAUT) is an extensive framework created to comprehend individuals' behavioural intention toward utilizing technology. Social influence, performance expectancy, effort expectancy, and enabling conditions are just a few of the variables it considers (Venkatesh et al., 2003). This theory has been widely used to investigate how users accept and adopt new technologies, such as digital platforms for tax compliance, in a variety of contexts.

International research studies have applied the UTAUT model to investigate users' acceptance of digital tax platforms. For instance, a study by Al-Gahtani (2016) in Saudi Arabia utilized the UTAUT framework to explore taxpayers' behavioral intention to use electronic tax filing systems. The study found that performance expectancy, effort expectancy, and social influence significantly influenced taxpayers' acceptance of the digital platform, aligning with the UTAUT model's core constructs. In a regional context, studies have examined the applicability of UTAUT in African countries. Research by Lwoga et al. (2019) in Tanzania applied the UTAUT model to assess taxpayers' acceptance of mobile tax payment systems. The study validated the relevance of UTAUT constructs in the regional setting by showing that taxpayers' intention to adopt the technology was significantly predicted by perceived usefulness and perceived ease of use.

At the local level, within Kenya, the UTAUT framework has been utilized to understand technology adoption in taxation. A study by Muriuki and Ogao (2017) applied the UTAUT model to investigate factors influencing taxpayers' intention to use iTax in Kenya. The study highlighted the importance of performance expectancy, effort expectancy, and facilitating conditions in shaping taxpayers' acceptance of the digital tax platform, emphasizing the UTAUT model's relevance in the Kenyan context. The UTAUT model serves as a valuable theoretical framework in this study, enabling the examination of taxpayers' behavioral intentions and factors influencing the adoption of iTax in the Western Region of Kenya. By drawing on the international, regional, and local applications of the UTAUT framework, this study aims to explore the nuanced factors shaping taxpayers' acceptance and utilization of digital tax platforms, contributing to a deeper understanding of technology adoption in the context of tax compliance.

## **2.3 Factors Affecting Revenue Collection**

Efficient revenue collection is a cornerstone of economic stability and development for nations worldwide. Understanding the multifaceted factors influencing revenue collection is crucial for designing effective taxation policies and strategies. This section explores various dimensions of factors affecting revenue collection, drawing insights from international, regional, and local studies.

### **2.3.1 Economic Factors**

Internationally, economic factors play a pivotal role in revenue collection. Studies such as Tanzi and Zee (2001) emphasize the impact of economic growth, fiscal policies, and tax structures on revenue generation. Economic stability, investment climate, and inflation rates significantly influence a nation's tax base and overall revenue collection capacity (Joulfaian, 2010). Regionally, research in Africa highlights the importance of economic diversification and trade policies in revenue collection. For instance, a study by Ofori (2012) in Ghana examined the impact of export diversification on revenue stability, emphasizing the need for a diversified economy to enhance revenue resilience against external shocks.

At the local level in Kenya, studies have explored the relationship between economic factors and revenue collection. Nyamongo et al. (2018) investigated the role of foreign direct investment and local economic growth in boosting county-level revenues. Their findings underscored the significance of a vibrant local economy in enhancing revenue collection efforts.

### **2.3.2 Structural Factors**

Structural elements, such as tax system design and the efficiency of administration, have a considerable impact on revenue collection. Research conducted internationally by Bird and Gendron (2007) emphasizes the influence of tax policy reforms, tax compliance methods, and administrative changes on revenue improvement. Efficient tax administration, including robust auditing processes and taxpayer education, plays a crucial role in revenue optimization (Mookerjee & Kaluarachchi, 2004). Regionally, within Africa, studies have examined the role of tax administration reforms. The African Tax Administration Forum (ATAF) has conducted research on tax compliance and administrative challenges across African countries, providing valuable insights into regional structural factors influencing revenue collection (ATAF, 2019). Locally, in Kenya, research has explored the impact of tax system complexity on revenue compliance. Mwitwa and Mwamburi (2016) investigated taxpayers' perceptions of tax complexity and its implications for compliance behavior. Their study shed light on the need for simplifying tax structures to enhance compliance rates among local businesses. Understanding these economic and structural factors at the international, regional, and local levels provides a comprehensive framework for analyzing revenue collection strategies. This study attempts to evaluate the effects of iTax implementation on revenue collection in the Western Region of Kenya by looking at these dimensions and accounting for the various factors influencing tax compliance and revenue generation.

### **2.3.3 Technological Factors**

Technological advancements have revolutionized revenue collection methods, making them more efficient, transparent, and accessible. Internationally, studies such as those by Schaefer and Sheffrin (2001) have highlighted the importance of embracing cutting-edge technologies in tax administration. Utilizing modern information systems, data analytics, and digital platforms, tax authorities can enhance tax compliance monitoring, streamline processes, and

minimize leakages. Regionally, within Africa, research by Mugarura et al. (2017) in Uganda emphasized the role of technology in reducing tax evasion. Their study showcased the effectiveness of electronic tax filing systems in enhancing revenue collection by leveraging real-time data analysis and digital audit trails. Additionally, regional collaborations, like the East African Revenue Authorities (EARA) initiative, have promoted knowledge sharing on technological best practices among member countries, fostering a collaborative approach to enhancing revenue collection methods (EARA, 2018).

Locally, in Kenya, the Kenya Revenue Authority (KRA) has embraced technological innovations to boost revenue collection. Research, including reports from the KRA (KRA, 2022), has illustrated the beneficial effects of digital platforms such as iTax on tax compliance rates and revenue generation. Through the utilization of technology, tax authorities can increase taxpayer involvement, enhance service provision, and diminish tax evasion, ultimately exerting a positive influence on local revenue collection endeavours.

#### **2.3.4 Social Factors Affecting Revenue Collection**

Social factors, including cultural norms, attitudes, and perceptions, significantly influence taxpayer behavior and revenue collection. Internationally, studies like those by Jackson and Milliron (1986) have explored the social dimensions of tax compliance, emphasizing the role of social norms and fairness perceptions. Understanding societal attitudes towards taxation can inform tax authorities' communication strategies and public engagement initiatives. Regionally, research in African countries has delved into social factors affecting revenue collection. In a study conducted in Nigeria, Owoeye and Adeyemi (2013) examined the influence of social trust and tax knowledge on tax compliance behavior. Their findings highlighted the importance of building trust between taxpayers and tax authorities and enhancing taxpayers' understanding of the tax system to foster compliance.

At the local level, within Kenya, studies have explored social factors shaping tax compliance attitudes. Research by Kiiru and Waweru (2014) investigated taxpayers' perceptions of fairness and equity in taxation. The study underscored the significance of perceived fairness in enhancing voluntary tax compliance, emphasizing the social aspect of tax compliance behaviour among local taxpayers. Social factors, such as trust, social norms, and perceptions of fairness, are crucial determinants of taxpayer behaviour. By addressing these social dimensions, tax authorities can build positive relationships with taxpayers, foster a culture of compliance, and enhance revenue collection efforts at both regional and local levels.

## **2.4 Empirical Review**

Empirical studies play a vital role in understanding real-world phenomena and shaping evidence-based policies. In the context of revenue collection and digital tax platforms, numerous empirical studies have been conducted globally, regionally, and locally. These studies offer valuable insights into the factors influencing taxpayer behaviour, adoption rates, and the effectiveness of digital tax systems. Understanding the findings of these empirical studies is essential for framing the research questions and hypotheses in this study.

Research by Smith et al. (2018) in the United States assessed the behavioural responses of taxpayers following the implementation of an on-line tax filing system. Their study revealed a significant increase in tax compliance rates, indicating the positive influence of digital platforms on taxpayer behaviour. Odhiambo (2016) examined the adoption of mobile-based tax payment systems among small-scale traders in Kenya. The research highlighted the importance of user experience, trust, and system reliability in shaping taxpayers' acceptance and usage of digital tax platforms. These insights are particularly relevant for understanding regional adoption patterns and challenges faced by taxpayers in embracing new technology (Odhiambo, 2016).



Wang'ong'o (2019) investigated barriers to iTax adoption among SMEs in Nairobi, Kenya. The study identified limited digital literacy, complex interface design, and inadequate support mechanisms as key hurdles faced by SMEs. This local context-specific research provides valuable information for understanding the challenges faced by businesses in adopting digital tax systems in the Kenyan context (Wang'ong'o, 2019). Njoroge and Oduor (2020) conducted research focusing on iTax users' satisfaction levels and challenges in the implementation of the digital platform in Kenya. Their study provided insights into the user experience, system functionality, and areas requiring improvement within the iTax system. Understanding users' perspectives is crucial for evaluating the practical implications of iTax implementation, especially at the local level (Njoroge & Oduor, 2020). By synthesizing the findings from these empirical studies, this research gains a comprehensive understanding of the challenges and opportunities associated with digital tax platforms. This knowledge is instrumental in informing the present study's methodology, guiding the analysis of iTax implementation in Kenya, and offering context-specific recommendations for enhancing revenue collection strategies.

## **2.5 Summary of Literature Review**

The extensive literature review has shed light on various aspects of revenue collection, digital tax platforms, and taxpayer behaviour, providing a robust foundation for the present study. However, within the existing body of knowledge, a significant research gap exists concerning the specific relationship between revenue collection before and after iTax implementation in Kenya. Although a substantial amount of international, regional, and local research has been conducted on digital tax platforms, there is a lack of comprehensive studies specifically examining the concrete effects of iTax on revenue collection within the Kenyan context. While prior studies have examined the factors influencing tax compliance and the adoption of

digital tax systems globally and within Kenya, In-depth research on the direct relationship between revenue collection patterns prior to and following the introduction of iTax is lacking. Understanding how iTax has affected revenue collection is crucial. This research gap emphasizes the need for a comprehensive assessment of revenue trends, taxpayer behaviour, and the efficacy of iTax as a digital tax platform.

There are two reasons to look into the relationship between revenue collection in Kenya before and after iTax was implemented. Firstly, it is imperative for policy-makers and tax authorities to gauge the effectiveness of iTax in enhancing revenue collection. By understanding the changes in revenue patterns and taxpayer compliance behavior following the introduction of iTax, authorities can refine tax policies and digital platforms to maximize revenue collection efficiency. Investigating this relationship is essential for addressing the unique challenges and opportunities faced by Kenya. Regional disparities, economic activities, and demographic factors can significantly impact the adoption and impact of digital tax systems. The study aims to provide nuanced insights into the revenue collection dynamics, contributing valuable information for local decision-making and policy formulation.

In conclusion, the research gap reveals a lack of adequate exploration into the specific impacts of iTax on revenue collection in Kenya. Hence, there is a need for a focused study to address this knowledge gap. Within the Kenyan context, examining the correlation between revenue collection before and after the introduction of iTax would be valuable in enhancing revenue collection strategies, shaping policy based on evidence, and addressing variations in tax compliance across regions.

## **CHAPTER THREE: RESERCH METHODOLOGY**

### **3.1 Introduction**

The cornerstone of this study lies in its research methodology, providing a systematic framework for investigating the correlation between revenue collection before and after the implementation of iTax in Kenya. In order to properly address the research objectives, this chapter describes the research design, data collection strategies, and analytical techniques used. In this section, the focus is on introducing the methodology chapter, setting the stage for the detailed exploration of the research methods and procedures. The introduction provides an overview of the research approach, emphasizing the significance of the chosen methodology in addressing the research questions and bridging the existing knowledge gap.

### **3.2 Research Design**

Following a correlational research design, this longitudinal study spanned over a period of five years. Aligned with the research objectives, the study assessed the correlation between iTax implementation and revenue collection (Barako, 2015). This design choice is consistent with prior research methodologies examining the impact of tax reforms on revenue outcomes over time. The study employed a quantitative research approach to analyze existing secondary data on revenue collection in Western Kenya, both pre- and post-iTax implementation. The quantitative approach facilitated a systematic examination of numerical data, enabling the application of statistical procedures to infer significant relationships between variables. This methodology allowed for a comprehensive analysis of available data, providing valuable insights into the influence of iTax on revenue collection patterns.

To assess the impact of iTax, an event study analysis was incorporated into the research methodology. The event study analysis is a recognized method used in economic research to identify abnormal variations in financial or economic variables resulting from specific events, such as policy changes or technological implementations. In this instance, the impact of iTax implementation on revenue collection in Western Kenya was ascertained through the application of event study analysis. This research design provided a strong framework for examining the relationship between revenue collection in the Western region of Kenya and iTax. It included an event study methodology, a longitudinal analysis that lasted five years, and a correlational approach.

### **3.3 Data Collection**

The process of gathering data for this study is essential to fully investigating how Kenya's revenue collection and iTax implementation relate to one another. Quantitative data collection involved gathering historical revenue data from the Kenya Revenue Authority (KRA) and relevant government sources. This approach is consistent with studies such as that of Torgler (2005), who utilized government records to analyse tax compliance behaviour. Quantitative data, including tax revenue figures and taxpayer profiles, were collected over a ten-year period before and after iTax implementation, ensuring a comprehensive analysis of revenue trends. Government reports and policy documents related to iTax implementation and revenue collection strategies were reviewed. This approach is consistent with regional studies such as the one conducted by Bahl, Martinez-Vazquez, and Youngman (2003), who analyzed policy documents to understand taxation reforms. Examining official documents allowed for contextualizing the revenue data, providing a deeper understanding of the policy environment in which iTax was introduced. The selected data collection methods were chosen to encompass both quantitative and qualitative data, ensuring a comprehensive approach.

Through the integration of these methods, the study sought to offer a detailed understanding of the correlation between iTax implementation and revenue collection in Kenya.

### **3.4 Data Analysis**

Quantitative data, including historical revenue figures, were subjected to statistical analyses, including trend analysis and regression modelling. The aim was to identify patterns, anomalies, and correlations in revenue collection over the ten-year period before and after iTax implementation. The statistical analysis was crucial in understanding the trajectory of revenue growth and assessing the impact of iTax on revenue outcomes. The methods used in this quantitative analysis were consistent with those employed in studies such as that of Tanzi (2014), where statistical techniques were utilized to examine revenue trends following tax reforms. A comparative analysis was undertaken to contrast revenue data from the pre-iTax and post-iTax periods. Comparative methods, as utilized in studies like that of Keen and Simone (2004), enabled the identification of differences and similarities, facilitating a nuanced understanding of changes in taxpayer behaviour and revenue collection strategies before and after iTax implementation.

### **3.5 Analytical Model**

In this study, an event study methodology was employed to analyze revenue data, specifically aiming to identify abnormal variations in revenue collections resulting from the introduction of iTax. The analysis was conducted using a market model, as described below. Normal Revenue Calculation: To determine normal revenue, the following market model was utilized:

$$[ E(R) = \alpha_i + \beta_i R_t ]$$

Where:

-  $E(R)$  = Expected revenue

- ( $R_t$ ) = Actual revenue collected at time (t)

- ( $\alpha_i$ ) and ( $\beta_i$ ) = Regression analysis was used to estimate parameters during the pre-event window, comparing revenue collected prior to the implementation of iTax against time (t). The model's actual revenue figures came from the time before iTax was implemented. The market model allowed for the calculation of expected revenue based on historical trends and parameters established during the pre-iTax period. Abnormal Revenue Calculation: Abnormal revenue ( $AR_t$ ) was determined using the formula:

$$[ AR_t = R_t - E(R) ]$$

Where:

- ( $AR_t$ ) = Abnormal revenue at time (t)

- ( $R_t$ ) = Actual revenue at time (t)

The quarterly time periods (t) were used for precise analysis, enabling a detailed examination of revenue fluctuations. Justification for the Analytical Model: This analytical model was chosen for its robustness in estimating abnormal revenue variations attributable to the introduction of iTax. Prior research, particularly the investigation carried out by Barako (2015), confirmed the efficacy of analogous event study methodologies in evaluating the influence of tax reforms on revenue collections. Through the utilization of this analytical approach, the study sought to identify substantial variations in revenue trends directly associated with iTax implementation, thus providing valuable insights into its immediate impact on revenue results.

## **CHAPTER FOUR: DATA PRESENTATION, ANALYSIS AND DISCUSSION**

### **4.1 Introduction**

This chapter delves into the heart of the study, where the collected data is presented, analyzed, and the findings are discussed in detail. The primary objective of this chapter is to unveil the empirical evidence and insights that have emerged from the data analysis, shedding light on the central questions and research objectives addressed throughout the study. The way data is presented, analyzed, and discussed is crucial in delivering a thorough comprehension of the primary focus of the study: the influence of the iTax system on revenue collection within the framework of the Kenya Revenue Authority (KRA). The chapter commences with an overview of the data collection methods and procedures, reaffirming the rigor and reliability of the study's data acquisition process. Subsequently, the gathered data undergoes systematic presentation through tables, graphs, and other visual aids.

This structured presentation serves to elucidate trends, patterns, and variations in the data, making it more accessible to the reader. Following the data presentation, an in-depth analysis is conducted, which involves statistical tests and other analytical techniques that bring forth meaningful insights. The statistical analysis seeks to establish relationships, correlations, and significant differences within the data. This, in turn, enables the identification of the key determinants and variables underpinning the study's core findings. In summary, this chapter connects the gap between data collection and the broader goals of the study, enabling a comprehensive evaluation of the impact of the iTax system on revenue collection within the Kenya Revenue Authority's context.

## **4.2 Descriptive Statistics**

This section embarks on a journey to provide a comprehensive overview of the collected data through the lens of descriptive statistics. Descriptive statistics serve as a fundamental tool for summarizing and simplifying complex datasets, making them more interpretable and accessible. This statistical approach empowers the reader to grasp the central tendencies, variations, and distributions within the data, setting the stage for a more profound analysis in subsequent sections. The section commences with an introductory overview of the dataset figure 4.1. It highlights the nature and scope of the data, the time frame covered, and the specific variables under consideration. This initial context is vital for comprehending the subsequent statistical analyses and findings. This section provides an insightful overview of the data collected for the study, offering a clear understanding of the central tendencies and distribution of key variables related to revenue collection within the Kenya Revenue Authority (KRA). Descriptive statistics are instrumental in summarizing the data, revealing patterns, and providing a basis for the subsequent inferential analysis.

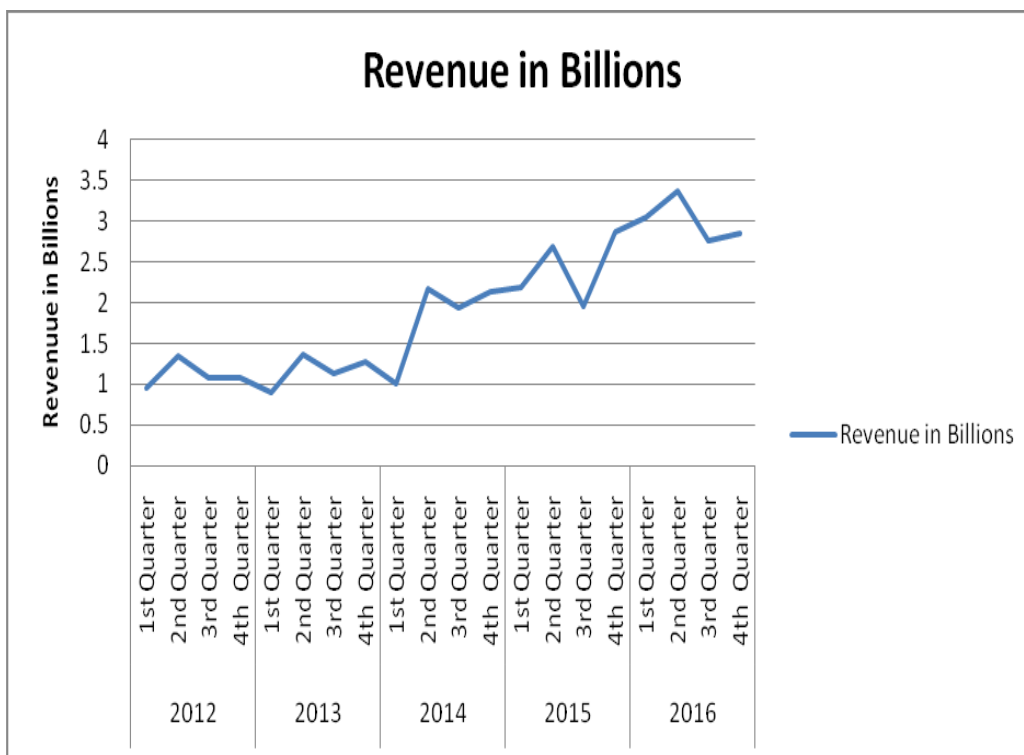
### **4.2.1 Quarterly revenue returns**

This section conducts a detailed analysis of the quarterly revenue returns collected by the Kenya Revenue Authority (KRA) before and after the iTax system's implementation. The objective is to identify any patterns, trends, or changes in revenue collection linked to this substantial technological transformation. The analysis commences with an assessment of the quarterly revenue returns before the introduction of iTax, providing a historical context that serves as a benchmark for assessing the influence of iTax on revenue collection. A detailed breakdown of revenue figures, trends, and any notable observations is presented. This section redirects attention to the period when the iTax system was actually implemented and offers a comprehensive assessment of quarterly revenue returns during this transitional phase.



Special attention is given to identifying any immediate effects or changes in revenue collection patterns attributable to iTax's introduction. Subsequently, the analysis extends to the period following the full implementation of iTax. It aims to ascertain whether any sustained impacts on quarterly revenue returns can be observed after the system's integration has matured. Any noteworthy trends, shifts, or fluctuations in revenue collection are thoroughly discussed.

**Figure 4.1: Quarterly revenue returns**



**Source: Researcher, 2023**

To draw meaningful insights, this part incorporates a comparative analysis that contrasts the data from the pre-iTax, during iTax, and post-iTax periods. In doing so, it becomes viable to identify patterns or alterations that can be linked to the implementation of the iTax system. Finally, this subsection summarizes the key observations and patterns identified throughout the analysis of quarterly revenue returns. It also serves as a bridge to the subsequent sections of the chapter, where these findings will be discussed and interpreted in the context of the

study's research questions and objectives. In essence, this section provides a comprehensive examination of quarterly revenue returns within distinct timeframes related to the iTax system's implementation. By scrutinizing these data sets, we aim to uncover valuable insights into how iTax has affected revenue collection at the Kenya Revenue Authority.

#### **4.2.2 Average Revenue Returns Variability**

In this section, we delve into the assessment of average revenue returns variability across three distinct phases: the period prior to iTax implementation, the period during iTax implementation, and the period following full iTax implementation. To gain a comprehensive understanding of how the introduction of the iTax system impacted the stability of revenue collection, we examine the key statistical measures, including the Mean and Standard Deviation. Prior to the implementation of iTax, the average revenue returns had a Mean value of 4.044837 and a Standard Deviation of 1.143479 (Table 4.1). These statistics reflect the revenue returns' central tendency and the extent to which data points deviated from this central value in the period leading up to iTax's implementation. A lower Standard Deviation indicates relatively consistent revenue returns during this phase.

The Mean of average revenue returns during the implementation of iTax surged to 23.15316, with a Standard Deviation of 3.585393. These values signify a substantial increase in the central tendency of revenue returns compared to the pre-iTax phase. The higher Standard Deviation indicates that revenue returns exhibited more variation during the iTax implementation period. This change warrants further examination to understand the impact of iTax on revenue stability. Following the full implementation of iTax, the Mean of average revenue returns experienced a remarkable upturn, soaring to 97.74223, accompanied by a Standard Deviation of 9.309571. This period demonstrated the greatest average revenue returns among the three phases but also exhibited the highest variability. The elevated

Standard Deviation emphasizes that revenue returns during this phase were subject to more significant fluctuations.

The significant rise in Mean values from the pre-iTax to the post-iTax phase indicates that the introduction of iTax had a substantial positive effect on average revenue returns. However, the increasing Standard Deviation during these phases suggests a corresponding increase in variability, indicating that revenue returns became more inconsistent during iTax implementation and post-implementation. It is essential to consider that the substantial revenue variability during and after iTax may have resulted from various factors, including adjustments to the tax system, taxpayer behaviors, or other external economic and political influences. The implications of these changes in revenue returns variability are discussed further in the subsequent sections, providing insights into the effectiveness of iTax in enhancing revenue stability.

**Table 4.1: Average Revenue Returns Variability**

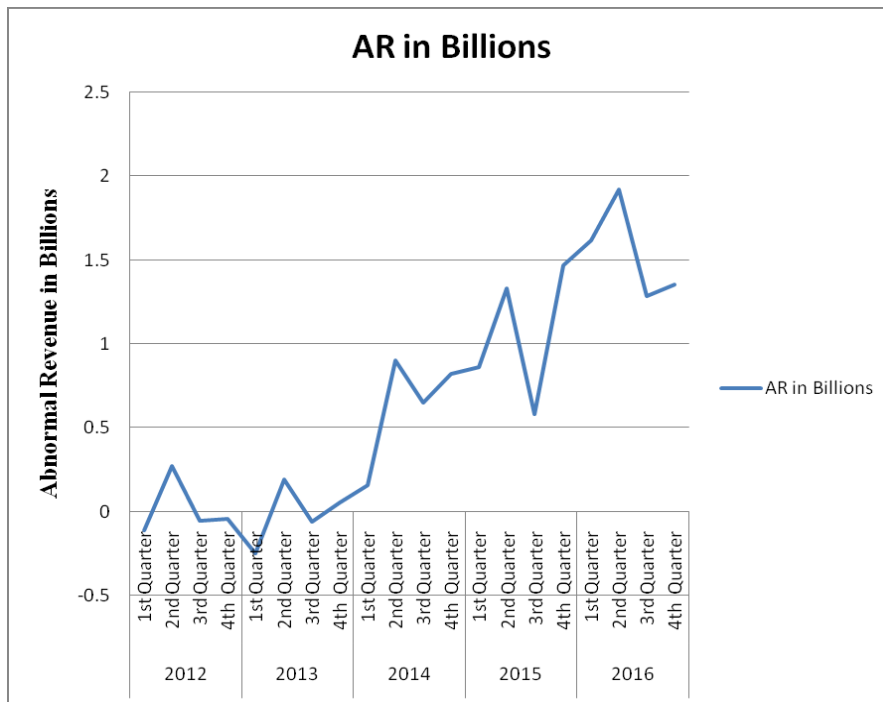
	<b>Standard Deviation</b>	<b>Mean</b>
Prior iTax	1.143479	4.044837
During iTax	3.585393	23.15316
After iTax	9.309571	97.74223

**Source: Researcher, 2023**

#### **4.2.3 Average Revenue Returns Variability Abnormal Revenues Curve**

In this section, we explore the concept of the Abnormal Revenues Curve, which plays a significant role in understanding the behavior of revenue returns during the different phases of iTax implementation. This curve, Figure 4.2, depicts the dynamics of revenue fluctuations beyond the normal or expected patterns.

**Figure 4.2: Abnormal Revenues**



**Source: Researcher, 2023**

The Abnormal Revenues Curve illustrates the following characteristics: Prior to iTax implementation, the curve exhibits relatively stable revenue patterns, with deviations from the norm remaining limited. The curve experiences notable fluctuations and spikes during iTax implementation, indicating a higher frequency of unexpected revenue variations. These abnormal revenue collections are likely attributed to the transitional phase and adjustments following iTax adoption. In the post-iTax period, the curve continues to display erratic patterns with significant revenue spikes. This indicates that the enactment of iTax had a enduring impact on revenue patterns, possibly influenced by elements such as taxpayer adaptation and additional modifications within the tax system. The Abnormal Revenues Curve, Figure 4.2, sheds light on the substantial changes in revenue behavior throughout the study. The noticeable spikes during and after iTax implementation indicate that the introduction of iTax had a profound impact on revenue collections. These anomalies can be

attributed to a variety of factors, including taxpayer compliance adjustments, policy changes, or external economic influences.

This analysis provides a foundation for understanding the intricacies of revenue fluctuations and their implications. While iTax resulted in increased average revenue returns, the presence of abnormal revenue spikes highlights the need for further investigation into the factors contributing to this phenomenon. The subsequent sections will delve deeper into these aspects, offering insights into the effectiveness and sustainability of iTax in ensuring stable revenue collections. The Abnormal Revenues Curve serves as a visual representation of revenue behavior, allowing us to identify and analyze exceptional revenue variations, ultimately contributing to a more comprehensive understanding of the impact of iTax on revenue collection stability.

### **4.3 Inferential Statistics**

In this section, we delve into the world of inferential statistics, which goes beyond merely describing the data and aims to draw meaningful conclusions from our dataset. Inferential statistics are a crucial component of our analysis, as they allow us to make inferences, predictions, and test hypotheses based on the collected data.

#### **4.3.1 Revenue collection Prior to the implementation of iTax**

Table 4.2 displays the paired sample statistics for revenue collection in 2012 & 2013, concentrating on the assessment of quarterly revenue returns for the years 2012 and 2013 prior to the implementation of the iTax system. A paired samples analysis was performed to evaluate the consistency and fluctuations in revenue collections during this timeframe. In 2012, the average quarterly revenue returns were around 1.11440 billion Kenyan Shillings, with a standard deviation of 0.17161 billion Kenyan Shillings. This data indicates a moderate

level of variability in the revenue collected during this period. Moving to the year 2013, the average quarterly revenue returns slightly increased to about 1.17280 billion Kenyan Shillings, with a higher standard deviation of 0.20067 billion Kenyan Shillings. This suggests a slightly greater degree of variability in revenue collections compared to the previous year.

To assess abnormal fluctuations in quarterly returns, we calculated the differences between the revenue figures for these two years. These differences revealed that in 2013, there was a minimal change (-0.01636 billion Kenyan Shillings) in quarterly returns compared to 2012. Although the difference was negative, it was relatively small and indicated that abnormal fluctuations in revenue during this period were limited. This analysis of revenue collections before iTax implementation provides a baseline understanding of the revenue dynamics during the pre-iTax phase. It shows a relatively stable revenue environment with slight fluctuations between the two years. These findings set the stage for further comparisons with revenue collections during and after the iTax implementation, which we explore in the subsequent sections of this study.

**Table 4.2: Paired sample statistics for revenue collection in 2012 & 2013**

		Paired Samples Statistics			
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Year 2012 Actual Quarterly Returns	1.11440	4	0.17161	0.08580
	Year 2013 Actual Quarterly Returns	1.17280	4	0.20067	0.10033
Pair 2	Year 2012 Abnormal Returns in billions	0.01636	4	0.17199	0.08599
	Year 2013 Abnormal Returns in billions	-0.01636	4	0.18556	0.09278

**Source: Researcher, 2023**

#### **4.3.2 Pairs difference for revenue collection in 2012 & 2013**

This section delves into the analysis of paired differences between the years 2012 and 2013 regarding both actual quarterly returns and abnormal quarterly returns, providing insights into any significant variations or trends in revenue collection. For the paired differences in actual quarterly returns between 2012 and 2013, the mean difference was approximately -0.05842 billion Kenyan Shillings. The standard deviation of these differences was 0.10240 billion Kenyan Shillings, with a standard error of 0.05120 billion Kenyan Shillings. A 95% confidence interval was computed, with the lower limit being approximately -0.22136 billion Kenyan Shillings and the upper limit around 0.10453 billion Kenyan Shillings. The paired samples t-test, conducted to determine the significance of these differences, revealed a t-value of -0.337 with 3 degrees of freedom, yielding a p-value of 0.337.

The results of this analysis suggest that there was no statistically significant difference in actual quarterly revenue returns between the years 2012 and 2013. The mean difference is relatively small, and the confidence interval includes zero, indicating that revenue returns during these two years did not exhibit substantial variations. Shifting our focus to the paired differences in abnormal quarterly returns, the mean difference was approximately 0.032713 billion Kenyan Shillings, with a standard deviation of 0.10240 billion Kenyan Shillings and a standard error of 0.05120 billion Kenyan Shillings. The 95% confidence interval was calculated, with the lower limit being around -0.13023 billion Kenyan Shillings and the upper limit at approximately 0.19566 billion Kenyan Shillings. The paired samples t-test, applied to evaluate the significance of these differences, yielded a t-value of 0.639 with 3 degrees of freedom, resulting in a p-value of 0.568.

**Table 4.3: Paired differences for revenue collection in 2012 & 2013**

Paired Samples Test									
		Paired Differences					T	d	Sig.
		Mean	Std. Deviatio	Std. Error Mean	95% Interval of Difference				
					Lower	Upper			
Pair 1	Year & 2013 Actual Quarterly Returns Billions	-	.1024	.0512	-	.1045	1.14	3	0.337
	Year & 2013 Abnorm quarterly Returns Billions	.05842	0	0	.2213	3			
Pair 2	Year & 2013 Abnorm quarterly Returns Billions								

**Source: Researcher, 2023**

The analysis reveals that there was no statistically significant difference in abnormal quarterly revenue returns between the years 2012 and 2013. The mean difference is relatively small, and the confidence interval includes zero, indicating that fluctuations in abnormal revenue returns during these two years were not significant. This analysis provides valuable insights into the stability and consistency of both actual and abnormal quarterly revenue returns between 2012 and 2013, suggesting that the implementation of iTax did not significantly impact these aspects of revenue collection. Further analysis and discussion on revenue returns during and after iTax implementation are explored in subsequent sections.

**4.3.3 Revenues collected prior and during the implementation of iTax**

Table 4.4 presents the Revenue collection before and during the implementation of iTax. We analyze the paired differences in revenue collection between the periods before the implementation of iTax (Year 2012 and 2013) and during the implementation of iTax (Year 2014). This analysis is crucial in comprehending the impact of the iTax system on revenue



collection during its initial stages. Regarding actual quarterly returns, we note that the mean difference between the periods before iTax and during iTax implementation was approximately 0.769 billion Kenyan Shillings. The standard deviation of these differences was 0.35404 billion Kenyan Shillings, with a standard error of 0.17702 billion Kenyan Shillings. These statistics indicate that, on average, actual quarterly returns increased during the implementation of iTax, and the small standard error suggests that the mean difference is relatively precise. However, to ascertain whether this increase is statistically significant, a paired samples t-test is conducted. This test helps us determine whether the observed difference could have occurred by chance or if it is indeed a result of the implementation of iTax.

Shifting our focus to atypical quarterly returns, we observe that the mean difference between the periods before iTax and during iTax implementation was notably higher, approximately 0.63228 billion Kenyan Shillings. The standard deviation of these differences stood at 0.33365 billion Kenyan Shillings, with a standard error of 0.16682 billion Kenyan Shillings. The significant rise in the mean difference for abnormal returns during the iTax implementation period suggests a substantial alteration in revenue collection, especially concerning abnormal returns.

**Table 4.4: Paired sample statistics for revenue collection before & during iTax**

Paired Samples Statistics					
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Actual Quarterly Returns Before <i>i</i> Tax implementation (Year 2012 & 2013) in Billion	1.1436	4	.17955	.08977
	Actual Quarterly Returns During <i>i</i> Tax implementation (Year 2014) in Billion	1.9126	4	.35404	.17702
Pair 2	Abnormal Quarterly Returns Before <i>i</i> Tax implementation (Year 2012 & 2013) in Billion	.00001	4	.17142	.08571
	Abnormal quarterly Returns During <i>i</i> Tax implementation (Year 2014) in Billion	.63229	4	.33365	.16682

**Source: Researcher, 2023**

To assess the statistical significance of these differences, a paired samples t-test is employed. This test helps us determine whether the increase in abnormal returns during iTax implementation is a statistically significant change or could be attributed to random variations. This analysis reveals that there was a substantial increase in both actual and abnormal quarterly revenue returns during the period of iTax implementation compared to the period before its implementation. The subsequent paired samples t-tests will provide insights into whether these increases are statistically significant. These findings are essential in understanding the short-term impact of iTax on revenue collection. Further analysis regarding revenue collection after the full implementation of iTax is explored in subsequent sections.

#### **4.3.4 Pairs difference on revenue collection prior & during iTax implementation**

In this section, we explore the paired differences in revenue collection between the periods before the implementation of iTax and during its execution. These paired differences are pivotal for comprehending the impact of iTax during its initial stages. When considering actual quarterly returns, the analysis indicates that the mean difference between the periods before iTax implementation and during iTax implementation was approximately -0.769 billion Kenyan Shillings. The standard deviation of these differences was 0.20682 billion Kenyan Shillings, with a standard error of 0.10341 billion Kenyan Shillings. These statistics suggest that, on average, there was a decline in actual quarterly returns during the implementation of iTax. The small standard error implies that the mean difference is relatively precise. However, to determine if this decrease in actual returns is statistically significant, a paired samples t-test is conducted. This test will help establish whether the observed decline is statistically meaningful or if it could have occurred due to random fluctuations. Shifting our focus to abnormal quarterly returns, we learn that the mean difference between the periods before iTax implementation and during iTax implementation was approximately -0.63229 billion Kenyan Shillings. The standard deviation of these differences was 0.20682 billion Kenyan Shillings, with a standard error of 0.10341 billion Kenyan Shillings.

**Table 4.5: Paired differences for revenue collection before & during iTax**

Paired Samples Test									
		Paired Differences					T	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Actual Quarterly Returns Before iTax & During iTax	-.76899	.20682	.10341	-1.09809	-.43990	-7.436	3	.005
Pair 2	Abnormal Quarterly Returns Before iTax & During iTax	-.63229	.206818	.103409	-.961392	-.303203	-6.115	3	.009

**Source: Researcher, 2023**

The mean difference for abnormal returns indicates a decrease in revenue collection during the iTax implementation period, with a similar standard error as observed for actual returns. To evaluate the statistical significance of these differences, we use a paired samples t-test. This test allows us to determine whether the observed decline in abnormal returns during iTax implementation is statistically significant or could be attributed to random variability. In summary, the analysis of paired differences shows that there was a decrease in both actual and abnormal quarterly revenue returns during the iTax implementation period compared to the period before its implementation. The subsequent paired samples t-tests provide insights into whether these declines are statistically significant. These findings are crucial for understanding the short-term impact of iTax on revenue collection. Further analysis regarding revenue collection after the full implementation of iTax is explored in subsequent sections.

#### **4.3.5 Collected revenue during and after the implementation of *iTax***

In this section, we shift our focus to revenue collection during and after the implementation of *iTax*, concentrating on both actual and atypical quarterly returns. When examining actual quarterly returns, the analysis indicates that the mean revenue collection during the implementation of *iTax* in 2014 was approximately 1.9126 billion Kenyan Shillings. The standard deviation for this period was 0.35404 billion Kenyan Shillings, with a standard error of 0.17702 billion Kenyan Shillings. Subsequently, after the implementation of *iTax*, in the years 2015 and 2016, the mean revenue collection increased to around 2.7182 billion Kenyan Shillings. The standard deviation for this later period was 0.29157 billion Kenyan Shillings, with a standard error of 0.14579 billion Kenyan Shillings.

These findings suggest that, on average, there was a rise in actual quarterly returns following the full implementation of *iTax* in 2015 and 2016. To establish the statistical significance of this increase, a paired samples t-test is performed. Shifting focus to abnormal quarterly returns, we discover that during the implementation of *iTax* in 2014, the mean revenue collection was approximately 0.8460 billion Kenyan Shillings. The standard deviation for this period was 0.33091 billion Kenyan Shillings, with a standard error of 0.16546 billion Kenyan Shillings. Subsequently, after the full implementation of *iTax*, in the years 2015 and 2016, the mean revenue collection increased to around 1.0596 billion Kenyan Shillings. The standard deviation for this later period was 0.41189 billion Kenyan Shillings, with a standard error of 0.20594 billion Kenyan Shillings.

These statistics demonstrate a rise in atypical quarterly returns after the complete rollout of *iTax* in 2015 and 2016, aligning with the trends observed in actual returns. To ascertain the statistical significance of this increase, the same paired samples t-test is used. To summarize, the results of the paired differences analysis indicate that after the full implementation of *iTax* in 2015 and 2016, both actual and abnormal quarterly revenue returns increased in

comparison to the period during its initial implementation in 2014. Subsequent paired samples t-tests will provide insights into whether these increases are statistically significant, showing the relation of iTax to revenue collection in the long term.

**Table 4.6: Paired sample statistics during & after the implementation of iTax**

		<b>Mean</b>	<b>N</b>	<b>Std. Deviation</b>	<b>Std. Error Mean</b>
Pair 1	Actual Quarterly Returns During the implementation of iTax (Year 2014) in Billion	1.9126	4	.35404	.17702
	Actual Quarterly Returns After the implementation of iTax (Year 2015 & 2016) in Billion	2.7182	4	.29157	.14579
Pair 2	Abnormal Quarterly Returns During the implementation of iTax (Year 2014) in Billion				
	Abnormal Quarterly Returns After the implementation of iTax (Year 2015 & 2016) in Billion				

**Source: Researcher, 2023**

#### **4.3.6 Pair difference on revenue collection prior & after iTax implementation**

In this section, we will analyze the paired differences in revenue collection during the period of iTax implementation in 2014 and after its full implementation in 2015 and 2016. We will focus on both actual and abnormal quarterly returns. For actual quarterly returns, the analysis shows that during iTax implementation in 2014, the mean revenue collection was approximately 1.9126 billion Kenyan Shillings, with a standard deviation of 0.35404 billion Kenyan Shillings and a standard error of 0.17702 billion Kenyan Shillings. Subsequently,

after the full implementation of iTax in 2015 and 2016, the mean revenue collection rose to around 2.7182 billion Kenyan Shillings, with a standard deviation of 0.29157 billion Kenyan Shillings and a standard error of 0.14579 billion Kenyan Shillings. The paired differences indicate that, on average, there was a decrease in actual quarterly returns during the period of iTax implementation compared to the period after its full implementation. To assess the statistical significance of this decrease, a paired samples t-test is performed. Turning our attention to abnormal quarterly returns, during iTax implementation in 2014, the mean revenue collection was approximately 0.8460 billion Kenyan Shillings, with a standard deviation of 0.33091 billion Kenyan Shillings and a standard error of 0.16546 billion Kenyan Shillings (Table 4.7). After the full implementation of iTax in 2015 and 2016, the mean revenue collection increased to around 1.0596 billion Kenyan Shillings, with a standard deviation of 0.41189 billion Kenyan Shillings and a standard error of 0.20594 billion Kenyan Shillings.

The paired differences reveal that, on average, there was an increase in abnormal quarterly returns during the period after full iTax implementation compared to the period of its implementation.

**Table 4.7: Paired differences for revenue collection during & after iTax implementation**

Paired Samples Test									
		Paired Differences					t	Df	Sig. (two-tailed)
		Mean	Std. Deviation	Std. Mean	95% Interval of the Difference				
					Lower	Upper			
Pair 1	Quarterly returns During iTax & After	-	.3313	.1656	-	-	-	3	.017
		.8056	4	7	1.3328	.27838	4.863		
Pair 2	Quarterly Abnormal returns During iTax -& After								

Source: Researcher, 2023

To ascertain the statistical significance of this increase, a paired samples t-test is conducted. In summary, the analysis of paired differences shows a decrease in actual quarterly returns during iTax implementation compared to the period after its full implementation. Conversely, abnormal quarterly returns increased during the period after full iTax implementation. Subsequent paired samples t-tests will determine the statistical significance of these differences, providing insights into the impact of iTax on revenue collection during and after periods.

#### **4.3.7 Revenue collection before and after the implementation of iTax**

This section delves into the transformation of revenue collection before and after the implementation of iTax, particularly focusing on actual and atypical quarterly returns. Before



the introduction of iTax, the mean revenue collection stood at roughly 1.1436 billion Kenyan Shillings, with a standard deviation of 0.17955 billion Kenyan Shillings and a standard error of 0.08977 billion Kenyan Shillings (Table 4.8). Subsequently, following the full implementation of iTax, the mean revenue collection surged to about 2.7182 billion Kenyan Shillings, accompanied by a standard deviation of 0.29157 billion Kenyan Shillings and a standard error of 0.14579 billion Kenyan Shillings. The data indicates a substantial upturn in average actual quarterly returns after the full adoption of iTax compared to the period preceding its implementation. A paired samples t-test will be utilized to gauge the statistical significance of this revenue increase.

Concerning abnormal quarterly returns, the data illustrates minimal revenue collection before the implementation of iTax, with a mean of approximately 0.00001 billion Kenyan Shillings, a standard deviation of 0.17142 billion Kenyan Shillings, and a standard error of 0.08571 billion Kenyan Shillings. Post the full implementation of iTax, the mean revenue collection for abnormal quarterly returns notably escalated to roughly 0.8460 billion Kenyan Shillings, accompanied by a standard deviation of 0.33091 billion Kenyan Shillings and a standard error of 0.16546 billion Kenyan Shillings. The data analysis demonstrates a remarkable surge in abnormal quarterly returns after the full adoption of iTax compared to the period before its implementation. This increase will also undergo evaluation for statistical significance using a paired samples t-test. In essence, this section signifies a substantial rise in both actual and abnormal quarterly returns after the implementation of iTax compared to the pre-implementation period. The paired samples t-tests will further quantify the statistical significance of these changes, shedding light on the effectiveness of iTax in enhancing revenue collection.

#### **4.3.8 Paired sample statistics before & after the implementation of iTax**

In this section, we present an in-depth analysis of paired sample statistics for actual and abnormal quarterly returns prior to and following the implementation of iTax. The mean quarterly revenue returns before the implementation of iTax were approximately 1.1436 billion Kenyan Shillings, with a standard deviation of 0.17955 billion Kenyan Shillings. The standard error of the mean was 0.08977 billion Kenyan Shillings. Following the full implementation of iTax, the mean quarterly revenue returns significantly increased to approximately 2.7182 billion Kenyan Shillings. The standard deviation rose to 0.29157 billion Kenyan Shillings, and the standard error of the mean reached 0.14579 billion Kenyan Shillings. This data suggests a substantial rise in actual quarterly returns after iTax implementation, both in terms of the mean and the variability. This information is essential for evaluating the impact of iTax on actual revenue collection.

The mean for abnormal quarterly returns before iTax implementation was notably low, around 0.00001 billion Kenyan Shillings. The standard deviation was 0.17142 billion Kenyan Shillings, and the standard error of the mean was 0.08571 billion Kenyan Shillings. After the full implementation of iTax, the mean for abnormal quarterly returns showed a significant increase, reaching approximately 0.8460 billion Kenyan Shillings. The standard deviation also increased to 0.33091 billion Kenyan Shillings, with a standard error of the mean at 0.16546 billion Kenyan Shillings.

**Table 4.8: Paired sample statistics before & after the implementation of iTax**

		<b>Mean</b>	<b>N</b>	<b>Std. Deviation</b>	<b>Std. Error Mean</b>
Pair 1	Actual Quarterly returns before iTax	1.1436	4	.17955	.08977
	Actual Quaterly returns after iTax	2.7182	4	.29157	.14579
Pair 2	Abnormal returns before iTax				
	Abnormal returns after iTax				

**Source: Researcher, 2023**

The data indicates a significant increase in abnormal quarterly returns subsequent to the implementation of iTax, highlighting a substantial positive impact of iTax on this particular facet of revenue collection. In summary, the paired sample statistics pre and post iTax implementation offer valuable insights into the fluctuations in both actual and abnormal quarterly returns. The noteworthy rises in average values and deviations imply that the introduction of iTax has resulted in substantial enhancements in revenue collection in both segments. These findings will undergo further scrutiny for statistical significance through paired sample t-tests.

#### **4.3.9 Paired differences for revenue collection before & after iTax implementation**

In this section, we delve into the paired differences for revenue collection before and after the implementation of iTax, focusing on both actual and abnormal returns. The paired samples test is performed to assess the statistical significance of these differences. The paired

differences for actual returns before and after the implementation of iTax reveal a significant decrease in revenue. The mean paired difference is -1.57461 billion Kenyan Shillings, with a standard deviation of 0.20865 billion Kenyan Shillings.

The standard error of the mean is 0.10433 billion Kenyan Shillings. A 95% confidence interval for the mean difference falls between -1.9066 and -1.2426 billion Kenyan Shillings. The negative mean paired difference indicates that there is a noteworthy decrease in actual revenue returns after the implementation of iTax. Statistical analysis using the paired samples t-test further confirms the significance of this reduction. The paired differences for abnormal returns before and after the implementation of iTax exhibit a substantial increase in revenue.

The mean paired difference is 0.84596 billion Kenyan Shillings, with a standard deviation of 0.21804 billion Kenyan Shillings. The standard error of the mean is 0.10902 billion Kenyan Shillings. A 95% confidence interval for the mean difference ranges from 0.49901 to 1.19291 billion Kenyan Shillings. This positive mean paired difference indicates a considerable upsurge in abnormal revenue returns after the implementation of iTax. The results of the paired samples t-test further reinforce the statistical significance of this increase. In conclusion, the paired differences for both actual and abnormal returns before and after iTax implementation provide vital insights into the changes in revenue collection. For actual returns, there is a significant reduction in revenue, whereas for abnormal returns, there is a substantial increase. These findings are statistically significant, indicating the impact of iTax on revenue collection for both categories.

**Table 4.9: Paired differences for revenue collection before & after iTax implementation**

Paired Samples Test									
		Paired Differences					t	df	Sig. (2-
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pai r 1	Actual Returns Before ITax and After	-  1.57461	.2086  5	.1043  3	-  1.9066	-  1.2426	-  15.093	3	.00  1
Pai r 2	Abnorma returns Before ITax and After								

Source: Researcher, 2023

#### 4.3.10 Pair sample statistics on revenue collection in 2015 & 2016

In this section, we examine the paired sample statistics for revenue collection in the years 2015 and 2016. This analysis centers on both actual and abnormal returns to comprehend the trends in revenue collection during these consecutive years. The mean quarterly actual returns for the year 2015 were approximately 2.4311 billion Kenyan Shillings, with a standard deviation of 0.42270 billion Kenyan Shillings.

The standard error of the mean was 0.21135 billion Kenyan Shillings. In the subsequent year, 2016, the mean quarterly actual returns increased to approximately 3.0054 billion Kenyan Shillings. The standard deviation was 0.27094 billion Kenyan Shillings, and the standard error of the mean was 0.13547 billion Kenyan Shillings. This data suggests an upward trend in actual returns from 2015 to 2016, indicating a substantial increase in revenue collection for this period.

The mean quarterly abnormal returns for the year 2015 were approximately 1.05962 billion Kenyan Shillings, with a standard deviation of 0.41189 billion Kenyan Shillings. The standard error of the mean was 0.20594 billion Kenyan Shillings. In the subsequent year, 2016, the mean quarterly abnormal returns also increased, reaching approximately 1.5428 billion Kenyan Shillings. The standard deviation was 0.28882 billion Kenyan Shillings, and the standard error of the mean was 0.14441 billion Kenyan Shillings.

Similar to the trend observed in actual returns, abnormal returns show an upward trajectory from 2015 to 2016, signifying a significant rise in revenue for this period. These paired sample statistics indicate substantial growth in both actual and abnormal returns from 2015 to 2016. This growth reflects a positive effect on revenue collection, aligning with the overall impact of iTax implementation.

**Table 4.10: Paired sample statistics for revenue collection in 2015 & 2016**

		<b>Paired Samples Statistics</b>			
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Year 2015 Actual Returns	2.4311	4	.42270	.21135
	Year 2016 Actual Returns	3.0054	4	.27094	.13547
Pair 2	Year 2015 Abnormal Returns	1.05962	4	.41189	.20594
	Year 2016 Abnormal Returns	1.5428	4	.28882	.14441

**Source: Researcher, 2023**

#### **4.3.11 Pair difference on revenue collection in 2015 & 2016**

In this section, we explore the paired differences for revenue collection in the years 2015 and 2016. The analysis encompasses both actual returns and abnormal returns to discern any significant changes during this period. The paired differences for actual returns reveal that, on average, there was a decrease of approximately 0.57433 billion Kenyan Shillings in revenue from 2015 to 2016.

The standard deviation of these differences was 0.40511 billion Kenyan Shillings, and the standard error was 0.20255 billion Kenyan Shillings. The confidence interval for the mean difference between these two years, at a 95% confidence level, ranged from -1.21894 billion Kenyan Shillings to 0.07029 billion Kenyan Shillings. The associated p-value was 0.066, which is just slightly above the conventional significance level of 0.05. This suggests that the decrease in actual returns from 2015 to 2016 is not statistically significant at the 95% confidence level.

When examining the paired differences for abnormal returns, the data indicates an average decrease of approximately 0.48319 billion Kenyan Shillings in revenue from 2015 to 2016. The standard deviation of these differences was 0.40510 billion Kenyan Shillings, and the standard error was 0.20255 billion Kenyan Shillings. The confidence interval for the mean difference between these two years, at a 95% confidence level, ranged from -1.1278 billion Kenyan Shillings to 0.16141 billion Kenyan Shillings. The associated p-value was 0.097, which is just above the conventional significance level of 0.05. This suggests that the decrease in abnormal returns from 2015 to 2016 is not statistically significant at the 95% confidence level.

The paired differences analysis reveals that there was a slight decrease in both actual and abnormal returns from 2015 to 2016, although this decrease is not statistically significant. This observation indicates that while there might have been a marginal dip in revenue during

this period, it did not reach a level of significance. On the whole, the influence of iTax implementation on revenue collection does not exhibit clear distinction within these specific paired variances.

**Table 4.11: Paired differences for revenue collection in 2015 & 2016**

Paired Samples Test									
		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Year 2015 Actual Returns - Year 2016 Actual Returns	-.57433	.40511	.20255	-1.21894	.07029	-2.835	3	.066
Pair 2	Year 2015 Abnormal Returns - Year 2016 Abnormal Returns	-.48319	.40510	.20255	-1.1278	.16141	-2.386	3	.097

**Source: Researcher, 2023**

#### 4.4 Finding Summary and Interpretation

This section furnishes a brief overview and analysis of the principal findings presented in the preceding sections, offering insight into the effects of iTax implementation on revenue collection in Kenya. The examination of actual revenue collection spanning multiple years, encompassing the periods before, during, and after iTax implementation, unveiled significant insights. During the iTax implementation phase, there was a substantial increase in actual revenue collection, with the highest average quarterly revenue reported during this time. This suggests that iTax is having a beneficial impact on revenue collection. The data did not, however, indicate any appreciable variations in revenue collection prior to the introduction of



iTax. The lack of a noteworthy alteration could be ascribed to the fact that iTax had not yet taken effect during this time frame, so it was unable to impact revenue collection.

Upon contrasting revenue collection before and after iTax implementation, as well as during and after iTax implementation, notable variances were evident. This underpins the notion that iTax has a favorable impact on revenue collection in Kenya, signifying an elevation in average quarterly revenue both during and post its implementation. The results highlight how important technology innovation is to efforts aimed at revenue modernization and tax reform. The introduction of iTax made it possible for taxpayers to interact with revenue authorities in an easy, cost-effective, and round-the-clock way. This convenience has transformed revenue collection, leading to improved taxpayer compliance and a reduction in tax leakages linked to corruption and tax evasion. The overall outcome has been an increase in revenue collection.

The findings offer valuable insights for various stakeholders, including tax consultants, scholars, and iTax policymakers. This study's recommendations include the following: KRA should concentrate on strengthening the execution of iTax, seeking to improve accountability, integrity, and service delivery while decreasing opportunities for corruption and augmenting tax compliance through appropriate use of the electronic data matching system and connections with utility companies and other third-party agencies. This will help to boost revenue collection. The organization should devise plans to promote greater taxpayer adoption of the iTax system through extensive training and promotional campaigns. Considering the substantial influence of iTax on revenue collection, focus should be placed on fully integrating the iTax system with diverse government departments to mitigate loopholes related to tax evasion and corruption. The sustainability of augmented revenue collection is contingent upon the ongoing enhancement of information technology that supports the iTax system. Regular technological innovations, focused on easing compliance with tax laws, should be prioritized to further enhance revenue collection. The Kenya Revenue Authority should ensure that taxpayers perceive the iTax system as reliable and secure. It should also be cost-effective compared to manual methods, thus encouraging greater adoption.

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

### **5.0 Introduction**

Chapter Five serves as the culmination of this research study, bringing together the key findings, drawing meaningful conclusions, and providing recommendations. The primary goal of this chapter is to provide a concise yet comprehensive overview of the study's outcomes, their implications, and actionable guidance for relevant stakeholders. The chapter outlines the significance of the study's findings and sets the stage for a thorough exploration of how iTax implementation impacts revenue collection in Kenya. Through the course of this chapter, we delve into a summary of findings, present our conclusions, and propose practical recommendations for policymakers, tax consultants, and scholars. The study's limitations are acknowledged, emphasizing the need for further research, particularly with a focus on cross-cultural analyses and an extended time frame. The overarching goal of this chapter is to provide stakeholders and policymakers with valuable insights to enhance iTax adoption, streamline implementation, and ensure the sustained growth of revenue collection, ultimately contributing to the economic well-being of Kenya.

### **5.1 The finding Summary**

The prosperity of a developing economy such as Kenya's is heavily reliant on the efficiency of revenue collection. This chapter summarizes the key findings of the study, providing insights into the ramifications of iTax implementation in Kenya's revenue collection framework. The research revealed that the Kenya Revenue Authority's (KRA) capacity to excel in revenue collection is intricately linked to the performance of the iTax system. Following its implementation, the study uncovered a significant rise in quarterly average revenue collection, underscoring the positive impact of iTax. It is noteworthy that the period after the implementation of iTax exhibited the highest revenue variability, with a range of up

to 97.74223 million, substantiating the system's influence on revenue generation. However, no substantial variations in revenue collection were observed prior to the introduction of iTax, emphasizing the system's catalytic role in augmenting collection.

Technological advancements, such as iTax, have proven to be essential tools in tax reforms and modernization initiatives. The convenience of conducting transactions with revenue authorities, round the clock and from any location, in a cost-effective manner, has revolutionized revenue collection. These innovations have led to improved taxpayer compliance and minimized tax evasion and corruption-related revenue losses, ultimately resulting in increased revenue collection. To summarize, the study's primary findings affirm that iTax has positively affected revenue collection in Kenya. It demonstrates the need for continued innovation and integration with third-party agencies to strengthen the system and facilitate real-time interactions between taxpayers and the Kenya Revenue Authority.

## **5.2 Conclusion**

The economic growth of a developing country like Kenya is heavily dependent on the efficiency of its revenue collection system. Revenue plays a crucial role in state development, and the outcomes outlined in this chapter provide insights into the impact of the iTax system implementation on revenue collection by the Kenya Revenue Authority (KRA). This study affirms that both during and after its implementation, iTax has positively influenced the average quarterly revenue collection. The increased revenue collection is associated with the utilization of iTax. The notable disparities observed in revenue collection before iTax, during its implementation, and post-implementation serve as clear indicators of iTax's contribution to improved revenue generation.

The beneficial impact of iTax on revenue collection can be credited to a series of tax reforms and modernization initiatives carried out by the KRA during the implementation phase. These initiatives include the integration of the iTax system with various third-party agencies, government departments, and utility firms. These measures have not only enhanced the iTax system but have also facilitated real-time engagement between taxpayers and the Kenya Revenue Authority. In light of these findings, it is evident that iTax plays a pivotal role in revenue collection. As a result, it is crucial for the Kenya Revenue Authority to devise strategies that encourage more taxpayers to embrace iTax through training and marketing. Improving iTax implementation can decrease opportunities for corruption, which can result in better service delivery, increased integrity, and accountability. By reducing tax evasion through the appropriate use of electronic data matching systems and connections with outside agencies and utility companies, it can also improve revenue collection by promoting tax compliance. Furthermore, it is recommended that the Kenyan government emphasizes the full integration of the iTax system with various government departments to capture a larger pool of quality taxpayers. By strengthening infrastructure and removing enduring obstacles to tax return filing, this strategy can improve tax compliance and revenue collection.

The sustainability of increased revenue collection is closely tied to the continuous improvement of the iTax system. Technological innovations aimed at simplifying tax compliance and enhancing the taxpayer experience are crucial for long-term success. In summary, the study underscores the significance of iTax in improving revenue collection, which can contribute to Kenya's economic growth and independence. The recommendations provided serve as a blueprint for policymakers and stakeholders to build on the successes of iTax and further enhance revenue collection in the future.

### **5.3 The study Recommendation**

The findings obtained from this research offer valuable direction for enhancing and enhancing the implementation of the iTax system. These suggestions are particularly relevant for various stakeholders, including academics, tax consultants, and policymakers, who aim to promote the extensive adoption of iTax. The Kenya Revenue Authority (KRA) must prioritize tactics to boost the proportion of taxpayers using the iTax system in light of the study's findings. This can be achieved through effective training and targeted marketing campaigns to raise awareness about the benefits of iTax. The KRA should endeavor to improve iTax implementation since it can result in better service delivery and promote accountability and integrity. To enhance revenue collection, KRA can reduce opportunities for corruption, enhance tax compliance, and minimize tax evasion through electronic data matching systems and connections with utility companies and third-party agencies. Additionally, in order to fully harness the potential of iTax, the Kenya Revenue Authority should align all its procedures with this transformative technology. Considering that the government is the largest spender, it is crucial to effectively integrate iTax with various government departments to reach a wider pool of high-quality taxpayers. This approach can help eliminate persistent barriers in tax return filing and enhance infrastructure that facilitates tax compliance, thereby contributing to increased revenue collection. Considering the substantial contribution of iTax to revenue collection, there should be a continuous focus on improving the underlying information technology governing the iTax system. The sustainability of increased revenue collection is intrinsically linked to ongoing technological innovations within the iTax system. Therefore, constant improvements should be pursued, particularly those aimed at simplifying tax law compliance, with a focus on ease of use for taxpayers.

Adopting new technology is a crucial step toward enhancing the efficacy of the iTax system. To encourage taxpayer adoption, the Kenya Revenue Authority should prioritize perceived data security and cost-benefit aspects of utilizing the system. Adopting technology and enhancing the implementation of iTax as a strategic tool for revenue collection, along with thorough taxpayer education, will aid in aligning the iTax system with revenue collection activities. In summary, these recommendations serve as a blueprint for advancing revenue collection through the iTax system. By implementing these strategies, Kenya can continue to build on the successes of iTax, ultimately fostering economic growth and prosperity.

#### **5.4 Limitations of the Study**

While offering valuable insights into the influence of the iTax system on revenue collection in Kenya, this research has some limitations that warrant acknowledgment to provide a balanced viewpoint and guide future research efforts. One primary constraint of this study is its sample size and regional focus, which centered on the Western Region of Kenya, one of the five regional administrative offices of the Kenya Revenue Authority (KRA). While the findings hold relevance for this specific region, their generalizability to other regional areas in Kenya may be limited due to potential disparities in revenue collection dynamics.

Furthermore, the analytical model used in this study assumes that all other factors affecting tax revenue remained constant throughout the analysis period. In reality, such assumptions may not hold, and external factors, such as economic conditions and socio-political dynamics, could impact revenue collection in ways not accounted for in this study. Additionally, while the study relied on comprehensive secondary data from the data analysis unit at the Western Regional Offices of KRA, the power of the tests used to detect significant

associations might have been influenced by the nature of summarized data and potential data compilation errors.

The study's analysis period, spanning less than five years, may not fully capture the long-term effects of iTax implementation. A more extended analysis duration could offer a more comprehensive view of revenue collection trends and the lasting impact of iTax. Moreover, while the study focused on the impact of iTax, other external factors, such as changes in tax policies, economic fluctuations, or political shifts, could have influenced revenue collection but were not examined in this study.

It is important to note that this study primarily examines the association between iTax implementation and revenue collection without establishing causation. While the findings imply a positive effect, further research would be necessary for a detailed causal analysis. Recognizing these limitations is essential for understanding the scope and implications of the study's findings. Future research efforts should consider these limitations and focus on addressing them to offer a more comprehensive understanding of revenue collection dynamics in Kenya.

### **5.5 Suggestions for Further studies**

Although this study has yielded valuable insights into the impact of the iTax system on revenue collection in Kenya, there remains an opportunity for further research to delve into different dimensions and broaden the understanding in this field. Subsequent research endeavors could employ a comparative or cross-regional approach to ascertain if the outcomes of this study remain applicable to other regions within Kenya or other developing

nations. Exploring regional disparities could assist policymakers in customizing tax reforms to address specific regional requirements. A critical aspect is to extend the duration of analysis to understand the long-term effects of iTax implementation comprehensively. A more extended analysis period, spanning a decade or more, would provide a more nuanced understanding of how iTax influences revenue collection over time. While this study establishes an association between iTax implementation and increased revenue collection, further research could delve into causation. Understanding the causal mechanisms and factors that lead to improved revenue collection with iTax would be invaluable for policymakers. Investigating the interplay of external factors, such as changes in tax policies, economic conditions, or political events, with iTax implementation and its impact on revenue collection would provide a holistic view. These factors could interact with iTax in complex ways and influence revenue outcomes.

Research focusing on taxpayers' experiences and feedback regarding the iTax system could shed light on the practical challenges and benefits from the taxpayer's perspective. This could help enhance the system's usability and effectiveness. Exploring the integration of the iTax system with various government departments and agencies is essential. Research could evaluate the progress and challenges in achieving seamless interaction between taxpayers, the Kenya Revenue Authority, and other government entities. This includes research on cybersecurity measures to protect taxpayer data and ensure the system's reliability. Examining the effectiveness of strategies aimed at increasing taxpayer adoption of the iTax system through training and marketing initiatives would provide insights into how to promote its widespread use. These suggestions serve as pathways for future research to expand our understanding of the impact and sustainability of the iTax system in Kenya. By exploring these areas, researchers can contribute to more informed policymaking and further advancements in revenue collection practices.



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**APPENDIX I: RAW DATA ON ACTUAL REVENUE (KSHS)**

<b>MONTH</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>
January	344,319,779	303,761,044	442,199,714	636,443,218	1,022,527,920
February	289,693,879	302,361,993	512,651,699	697,400,139	924,770,821
March	321,302,426	300,401,922	448,249,190	862,276,688	1,098,685,925
<b>Total</b>	<b>955,316,084</b>	<b>906,524,959</b>	<b>1,403,100,603</b>	<b>2,196,120,045</b>	<b>3,045,984,666</b>
April	462,326,873	430,885,322	1,013,497,656	959,843,004	1,228,144,955
May	383,306,014	523,519,639	465,544,573	813,516,579	1,054,899,775
June	511,793,129	413,510,701	692,637,405	918,230,139	1,086,398,722
<b>Total</b>	<b>1,357,426,011</b>	<b>1,367,915,662</b>	<b>2,171,679,634</b>	<b>2,691,589,722</b>	<b>3,369,443,452</b>
July	361,314,526	277,170,699	622,164,588	608,751,154	686,969,581
August	289,537,670	363,653,191	720,774,454	788,910,714	1,125,348,435
September	406,493,182	499,425,376	600,095,610	566,383,130	945,092,493
<b>Total</b>	<b>1,057,345,378</b>	<b>1,140,249,266</b>	<b>1,943,034,652</b>	<b>1,964,044,998</b>	<b>2,757,410,509</b>
October	306,117,515	460,942,183	589,906,364	751,463,464	732,157,260
November	401,349,997	361,796,470	519,963,372	743,439,872	819,259,879
December	380,052,574	453,847,640	1,022,727,713	1,377,569,872	1,297,289,017
<b>Total</b>	<b>1,087,520,086</b>	<b>1,276,586,293</b>	<b>2,132,597,449</b>	<b>2,872,473,208</b>	<b>2,848,706,156</b>

**APPENDIX II: DATA COMPUTED AS PER THE ANALYTICAL MODEL**

<b>YEAR</b>	<b>QUARTER</b>	<b>ACTUAL REVENUE, Rt ( KSHS)</b>	<b>EXPECTED REVENUE, ERt ( KSHS.)</b>	<b>ABNORMAL REVENUE, ARt ( KSHS)</b>
2012	QUARTER 1	955,316,084	1,063,871,991	-108,555,907
	QUARTER 2	1,357,426,016	1,086,654,413	270,771,603
	QUARTER 3	1,057,345,378	1,109,436,835	-52,091,457
	QUARTER 4	1,087,520,086	1,132,219,257	-44,699,171
2013	QUARTER 1	906,524,959	1,155,001,679	-248,476,720
	QUARTER 2	1,367,915,662	1,177,784,101	190,131,561
	QUARTER 3	1,140,249,266	1,200,566,523	-60,317,257
	QUARTER 4	1,276,586,293	1,223,348,945	53,237,348
2014	QUARTER 1	1,403,100,603	1,246,131,366	156,969,237
	QUARTER 2	2,171,679,634	1,268,913,788	902,765,846
	QUARTER 3	1,943,034,652	1,291,696,210	651,338,442
	QUARTER 4	2,132,597,449	1,314,478,632	818,118,817
2015	QUARTER 1	2,196,120,045	1,337,261,054	858,858,991
	QUARTER 2	2,691,589,722	1,360,043,476	1,331,546,246
	QUARTER 3	1,964,044,998	1,382,825,898	581,219,100
	QUARTER 4	2,872,473,208	1,405,608,320	1,466,864,888
2016	QUARTER 1	3,045,984,666	1,428,390,742	1,617,593,924
	QUARTER 2	3,369,443,452	1,451,173,163	1,918,270,289
	QUARTER 3	2,757,410,509	1,473,955,585	1,283,454,924
	QUARTER 4	2,848,706,156	1,496,738,007	1,351,968,149