

**ROLE OF TAX INTELLIGENCE IN REVENUE COLLECTION BY KENYA REVENUE
AUTHORITY IN MOMBASA COUNTY**

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DECLARATION

This research project is my original work and has not been presented for postgraduate diploma in any other academic or non-academic institution.

Signature.....

Date

JULIUS KIPROTICH
HDB336-C016-1757/2018

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

Signature.....

Date

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DEDICATION

I dedicate this research project to my parents who taught me to follow my dreams and actualize them. I also dedicate the project to my family for standing with me while working on it not forgetting my siblings for their unwavering support and also my classmates for encouraging me to complete this project.

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LIST OF ACRONYMS/ABBREVIATIONS

AI	Artificial Intelligence
CSS	Corporate Support Services Department
DTD	Domestic Tax Department
EAC	East Africa Community
ETR	Electronic Tax Register
GDP	Gross Domestic Product
IGS	Intelligence Gathering System
KESRA	Kenya School of Revenue Administration
KRA	Kenya Revenue Authority
Ksh	Kenya Shillings
LTO	Large Taxpayer Office
OECD	Organization for Economic Corporation and Development
PGA	Partner government agencies
PSRP	Public Service Reform Program
RRA	Rwanda Revenue Authority
RTC	Regional Training Centers
SMTO	Small and Medium Office
SPSS	Statistical Package of Social Science
SWOT	Strengths, Weaknesses, Opportunities and Threats
WCO	World Customs Organization accredited

DEFINITION OF TERMS

- Data-Intelligent Strategy:** Data intelligent strategy refers to analytical tools and methods employed by tax authorities to obtain taxpayer behaviours relating to compliance and tax evasion. It involves data mining techniques to obtain tax data from mass media, the internet, third-party sources like banks and digital channels such as social media (Preimesberger, 2018).
- Tax Intelligence Collection:** Is the process of gathering information, aimed at advising the tax administration in the planning and execution of its legal powers, especially in combating tax avoidance, tax evasion, and terrorist financing analyzing it and disseminating results to aid in decision making (Gitaru, 2019).
- Revenue Collection:** It is the process through which the government generates national income mainly through taxation from people and businesses and is usually executed by a state agency (Gatheru, 2018).
- Tax Intelligence Operation:** This is a method of searching of denied data which is information of interest for the tax administration but not available in open sources because the holders have hidden them (CIAT, 2018).
- Tax Intelligence:** Tax intelligence is the activity of gathering information, which aims to counsel the tax administration in the planning and execution of its legal powers, especially in combating tax avoidance, tax evasion, and terrorist financing (CIAT, 2018).

ABSTRACT

Kenya Revenue Authority has invested heavily on streamlining business processes leveraging on technology so as to achieve effective and efficient tax administration. Despite this, there are still challenges facing the tax agency among them tax evasion where taxpayers continue to invent new ways of dodging the taxman. This has led to continued shortfalls in revenue collection. Among the strategies outlined in KRA's 7th Corporate Plan was to enhance revenue collection through improved compliance and become a data and intelligence driven organization. The study sought to establish the role of tax intelligence in revenue collection by Kenya Revenue Authority in Mombasa County. The general objective was to establish the role of tax intelligence in revenue collection by Kenya Revenue Authority in Mombasa County. It was supported by three specific objectives: To establish the role of tax intelligence collection in revenue collection by Kenya Revenue Authority in Mombasa County. To determine the role of tax intelligence operations in revenue collection by Kenya Revenue Authority in Mombasa County. To assess the role of data-intelligent strategy in revenue collection by Kenya Revenue Authority in Mombasa County. The main theories guiding the study were economic deterrence theory, slippery slope framework (SSF) and resource dependency theory. The study adopted descriptive research design and a structured questionnaire to collect primary data. The target population was 588 Kenya Revenue Authority employees in Southern Region headquarters as detailed in Kenya Revenue Authority human resource database. A sample size of 238 was derived using Yamane formula and grouped into three strata consisting of top, middle and lower management using stratified random sampling technique. Structured questionnaires were used to collect data while descriptive and inferential statistics used to analyze the findings. Quantitative data was collected, tabulated, coded and analyzed using Statistical Package for the Social Sciences (SPSS) version 25. The findings of this study will be of vital significance to Kenya Revenue Authority, taxpayers and the academic network by providing them with an oversight of role of tax intelligence in revenue collection by Kenya Revenue Authority in Kenya. Based on the findings, it is evident that there is a significant relationship between tax intelligence collection, tax intelligence operations and data-intelligent strategy and revenue collection by Kenya Revenue Authority in Mombasa County. Correlations analysis results indicated a positive relationship between tax intelligence and revenue collection. In conclusion, the study established that tax intelligence is applied by KRA through making use of some renowned techniques associated to the task, in the course of investigations conducted by the tax intelligence staff. The study recommends that KRA management should allocate more financial resources to enable recruitment of more intelligence officers. The study also recommends that the government should allocate the organization with sufficient operation funds in order to expand intelligence operations in the country. Additionally, the study recommends regular training of intelligence officers and adequate consideration for intelligence reports by the management. Finally, the tax intelligence department should develop an Intelligence Management System, preferably in a computerized format and integrated in a network to allow for intelligence collection, analysis and dissemination and feedback management. There is need to conduct further research which may be extended in details to other variables. In addition, a repetition of this study should be conducted using a larger sample size, with inclusion of more variables and application of more robust set of statistical tools apart from those used in this study which could increase the robustness of study models and hence the validity of the results.

CHAPTER ONE

INTRODUCTION

1.1 Background

Tax is a compulsory fiscal charge or some other type of levy imposed on person's income by a state agency in order to fund government spending upon which failure to pay, evasion or resistance to taxation, is punishable by law (Odongo, 2016). When taxes are not fully paid, the state may impose civil penalties such as fines or forfeiture or criminal penalties such as incarceration on the non-paying entities or individuals. Tax systems, and particularly international taxation arrangements, have struggled to keep pace with globalization and market liberalization. Tax administrations, much like tax policy makers, are exposed to rapid change through the digitalization of the economy and the emergence of new business models and ways of working. To manage the ever changing tax landscape, alongside the increased use of analytics, tax authorities and tax advisors are starting to explore the possibilities for deploying sophisticated data analytics and artificial intelligence in tax to facilitate compliance and assist professionals and their clients with commonly encountered questions. While data analytics has received a lot of attention, artificial intelligence in tax is a relatively new portent (Owens, 2020).

Tax intelligence is the activity of gathering information, which aims to counsel the tax administration in the planning and execution of its legal powers, especially in combating tax avoidance, tax evasion, and terrorist financing (CIAT, 2018). It involves collecting data that is not publicly available, or analysis based at least in part on such data, that has been prepared for policy makers or other actors inside government. What makes it unique is that intelligence is based in part on some information that has been collected secretly using government sources and methods of information collection. This is the definition the study will follow. While it is true that any information from any source could accurately be called intelligence, in this study, the term intelligence will specifically refer to this kind of information that exclusively comes from government agencies, and is based on data that is collected by clandestine sources and methods.

The US has relied on intelligence since it has experienced criminals targeting the tax systems to obtain illegal and fraudulent refunds. To combat this problem, Internal Revenue Service (IRS) and Criminal Investigation (CI) has set up the Office of Refund Fraud at Headquarters to orchestrate CI.s efforts in this area (Fort, 2019). CI has set up Fraud Detection Centers (FDCs) at each of the

IRS Centers where tax returns were filed to have immediate access to tax returns as they are being filed. The personnel at the FDCs have developed sophisticated computer programs and analytical techniques to try and identify quickly the fraudulent schemes. CI also uses other methods to investigate these schemes if the refunds have already been issued. One of the most successful methods used by IRS-CI most recently is to investigate fraudulent return preparers for violating wire or mail fraud statutes as predicate offenses for money laundering statutes. All tax returns in the US are filed either by mail or electronically. The use of the money laundering statutes also allows the agents to obtain a warrant to immediately seize the stolen funds before it can be transferred out of the IRS jurisdiction. However, these statutes are only used in schemes where the refunds are of high dollar figures and the risk of losing the money is great. The US does not want to regularly use money laundering statutes to combat tax violations (CIAT, 2018).

In the Netherlands Tax Administration Organization, the intelligence/information aspect is part of the way in which the Tax Administration organizes its system of monitoring (Braam, 2019). According to the Netherlands Tax Administration guideline, all available manpower should be deployed in the places with the highest tax and financial risks. For this reason, specific risk indicators have been built in at the central level of the mass process of computerized processing to throw out a number of tax returns to be dealt with individually. So-called risk knowledge groups have been made responsible for gathering the information used to appraise the level of risk. These groups, which comprise expert staff from the Tax Administration regional offices, meet on a regular basis. The information they gather is gleaned from their own experiences, open sources, findings during audits etc. Current developments can also play a role. The knowledge groups set up to focus specifically on fraud are part of the Fiscal Intelligence and Investigation Service-Economic Investigation Service. They pay particular attention on tax and customs fraud, money laundering, VAT fraud, precursors (illicit drugs) and excise duty fraud. These knowledge groups work closely with other international agencies (Kodila-Tedik & Mutascu, 2015).

Deloitte UK developed a tax-related application which goes beyond rules-based solutions, using 'human eye matching' (fuzzy) and Artificial Intelligence, where the tool 'learns' from the user's tax decisions (Deloitte, 2019). The tool can rapidly analyze complete sets of data, eliminating both the risk of human error and sampling risk. In addition to its versatility which allows it to cater to a variety of compliance-related needs, this tool offers a fully documented process which reports on

the decisions made and tax positions taken. Software features allow the reviewer to focus on the most important or contentious decisions, which can be manually overridden if the reviewer is uncomfortable with the machine's decision. Time savings are realized immediately as analyses that would otherwise be done manually have been automated, while the evolving rule set can be rolled forward to future years which builds further efficiency over time. All in all, the tool makes a considerable contribution to effective tax risk management at a time when tax authorities are bringing increased pressure to bear on taxpayers (Owens, 2020).

The South African Revenue Service works together with other government agencies in enforcing tax laws. SARS not only enforces tax laws but also plays a role protecting the economy against money laundering and corruption (Storm & Coetzee, 2018). They are active participants in the Multi-Agency Working Group and the Anti-Corruption Task Team charged with combating corruption in government. Laws such as the Financial Intelligence Centre Act, the Prevention of Organized Crime Act and the Prevention and Treatment of Drug Abuse Act also lead SARS to join forces with the South African Police Department and the Financial Intelligence Centre. South Africa Finance Minister Tito Mboweni in his Supplementary Budget speech necessitated by the pandemic promised to tackle the criminal activities by focusing significantly on areas of syndicated fraud, they have seen a proliferation (Salie, 2020). Between April and September 2018, SARS has achieved 30 successful convictions in VAT and Personal Income Tax (PIT) fraud cases, involving R65 million. This represented a 100% success rate in convictions relating to the fraud cases that were investigated by SARS criminal investigators and finalized by the courts during this time, Chief Officer of Enforcement revealed (SARS, 2019). The cases related to charges of bribery, fraud, theft and contravention of the Income Tax Act, VAT Act.

The extent to which tax invasion fraud is perpetrated in Nigeria is quite high and alarming. In a bid to track all tax evaders and defaulters in the country, the FIRS launched a national intelligence gathering system. This move would help FIRS prevent tax evasion by gathering data that will expose defaulters and bring them to book hence the FIRS is currently restructuring its operations in order to surpass its 2020 revenue target (Modugu & Anyaduba, 2020). The intelligence gathering system is Information and Communication Technology based and is being implemented in close collaboration with the ICPC and other anti-corruption agencies as well as financial institutions to tackle economy based crimes, including money laundering. The collaboration with

the ICPC to track tax fraud and block all revenue leakages is to ensure that we raise the revenue for the government to fund its budget. We need the data and intelligence which you have to help us track tax evaders and bring them into the tax net. The sharing of data with the FIRS in order to track tax evaders, defaulters and tackle illicit financial flow in Nigeria will enable the government to raise its revenue profile in order to fund development projects (Adebolu, 2018).

Uganda formed The Uganda Financial Intelligence Authority which is a government agency established by the Parliament of Uganda to monitor, investigate, and prevent money laundering in the country in 2013 (Kodila-Tedik & Mutascu, 2015). It is also responsible for the enforcement of Uganda's anti-money laundering laws and the monitoring of all financial transactions inside the country's borders. Despite its formation, Uganda continues to lose at least US\$1b in revenue each year to illicit financial flows, corruption and money laundering activities. Ugandan economists and government authorities attribute the loss to UFIA's poor performance due to lack of specialized financial expertise, lack of enough resources and poor coordination among justice departments such as police, courts and other relevant entities (Buyondo, 2019). The Uganda Financial Intelligence Authority is working closely with URA to combat tax evasion and financial terrorism.

Kenya Revenue Authority was legislated in the year 1995 as part of the administration reforms to be the principal revenue collector on behalf of the Kenyan government. Its primary goal is to bring the country into financial autonomy through effective and efficient tax revenue mobilization. Its purpose is to assess, administer, collect, and enforcement all laws and regulations related to revenue and its core values are trustworthy, ethical, competent and helpful (Kenya Revenue Authority, 2019). It is divided into departments with Intelligence & Strategic Operations Department charged with the duty to Developing and implementing an effective framework for Intelligence collection, reporting, capacity in support of effective and efficient collection and management of intelligence. It also oversees timely and effective collection of intelligence in all areas of Authority's interest, management of effective linkages with stakeholders including other law enforcement agencies to facilitate collection and management of intelligence among others.

To ease tax assessment, collection and take services closer to the people, KRA maintains six service regions Southern Region being one of them with its headquarters in Mombasa. The Intelligence and Strategic Operations Department in Mombasa has partnered with partner government agencies to combat many financial crimes, tax evasion, and drug trafficking among

others. The objectives of tax intelligence are detection done through interviews, surveillance, execution of search warrants, analysis of financials, review of taxpayer records, and obtaining third party information. Disruption aimed at identifying tax evasion schemes and dismantling the cartels. Deterrence against tax evasion and other fraudulent activities to ensure compliance through prosecution, imposition of penalties, taxpayer education and awareness as well as media publicity among others and finally enhancing compliance through unearthing emerging evasion schemes and recommend measures to seal loopholes by amending the tax laws (KRA, 2019).

1.2 Statement of the Problem

Kenya Revenue Authority launched its 7th Corporate Plan themed “Revenue Mobilization through Transformation, Data-Driven decision-making and Tax Base expansion”. The authority’s refined vision is “To be A Globally Trusted Revenue Agency facilitating Tax and Customs compliance”. Among the strategic outcomes were to enhance revenue through improved compliance and become a data and intelligence driven organization (KRA, 2019). To achieve the outcomes required execution of fresh strategies focused towards customer service improvement, tax base expansion, combating illicit trade, and recourse to data analytics. Among the KPIs in the Corporate Plan was automation service where KRA has achieved an automation level of 95.7% and automation of individual taxpayers’ functions at 94%. They will also leverage on government’s commitment to automation and ongoing integration of iTax with the IFMIS, NHIF and NSSF (Gituru , 2019). This will seal most loopholes for tax evasion leading to improved revenue collection enabling the implementation of the Government’s Big Four Agenda and the long Term Plan of Vision 2030.

Kenya Revenue Authority has invested heavily on streamlining business processes leveraging on technology so as to achieve efficiency in operations (Gatheru, 2018). Despite this, KRA has continuously missed its revenue collection target, in the financial year 2015/2016 the taxman missed its revenue collection target by Kshs 12 billion, by Kshs 67 billion in 2016/2017 and Kshs 106 billion in 2017/2018. Although in the financial year 2018/2019, revenue collection grew by 11%, this was still short of the revenue target of 1.643 trillion, where the authority collected 1.58 trillion. The taxman further missed its mid-annual target by Sh88.3 billion after netting Sh779.3 billion in the first half of the 2019/2020 financial year (KRA, 2019). The short falls could be attributed inadequate staff transition to new ways of working by leveraging on technology to

provide improved services to taxpayers. Also taxpayers could invent ways of dodging the taxman through collusion or other ways to evade tax (Kioko, 2019).

A number of studies have been conducted, but none have closely addressed the role of tax intelligence in revenue collection by Kenya Revenue Authority. This information gap provides an opportunity for this kind of study. A study by Gatheru (2018), revealed that strategic management practices ensures objectives of an organization are customer focused and are sought in the most efficient processes. A study by Nishimwe (2019), the findings of the study show that predictive analytics, centralized analytics structure and predictive modelling have a positive significant effect on revenue collection by Rwanda Revenue Authority in Rwamagana. A study by Gitaru (2019) established that there was a significant increase in the revenue generated after introduction of intelligence gathering system. A study by Kioko (2019) implied that as the taxman increases its expenditure on intelligence collection, data-intelligent strategy and the management operations, it is expected that custom tax revenue will grow. A study by Ogola (2018), the findings revealed that resource allocation, management decision and customs legislation contributed significantly to the performance of customs revenue collection efficiency. Although the results were all positive, there was still a gap on the role of tax intelligence in revenue collection by Kenya Revenue Authority which necessitated further studies to be conducted.

1.3 Objective of the Study

The study was guided by a general objective which is split into three specific objectives.

1.3.1 General Objective

To establish the role of tax intelligence in revenue collection by Kenya Revenue Authority in Mombasa County.

1.3.2 Specific Objectives

- i. To establish the role of tax intelligence collection in revenue collection by Kenya Revenue Authority in Mombasa County.
- ii. To determine the role of tax intelligence operations in revenue collection by Kenya Revenue Authority in Mombasa County.
- iii. To assess the role of data-intelligent strategy in revenue collection by Kenya Revenue Authority in Mombasa County.

1.4 Research Questions

- i. What is the role of tax intelligence collection in revenue collection by Kenya Revenue Authority in Mombasa County?
- ii. What is the role of tax intelligence operations in revenue collection by Kenya Revenue Authority in Mombasa County?
- iii. What is the role of data-intelligent strategy in revenue collection by Kenya Revenue Authority in Mombasa County?

1.5 Justification of the Study

The findings of this study will be of vital significance to Kenya Revenue Authority, taxpayers and the academic network. KRA management will benefit from the study, as it will give them an overview on the need to improve intelligence in revenue collection and be instrumental in shaping their policies concerning tax evasion and other economic crimes hence come with laws that limit them. The taxpayers may also benefit from the outcome of the study in the sense that they could will be aware of government intelligence network and investigation hence aspire to be compliant to avoid being on the wrong side of the law. Finally, to the academic community by adding to the growing levels of knowledge in this area consequently, enable them to identify gaps upon which to build cases for further research and also add to current literature on role of tax intelligence in revenue collection by Kenya Revenue Authority.

1.6 Scope

The purpose of this study was to establish the role of tax intelligence in revenue collection by Kenya Revenue Authority in Mombasa County. The study focused on tax intelligence collection, tax intelligence operations and data-intelligent strategy in revenue collection by Kenya Revenue Authority in Mombasa County. Physically, the research was done in Southern Region headquarters in Mombasa County for simplicity of data collection since a sensibly smaller region was covered and it was done in the month of October 2020.

1.7 Limitation of the Study

The significant encounter was inputting the data collected into the SPSS and later interpreting results produced. To correct this weakness, the researcher contacted a professional to ensure generation and interpretation of the findings correctly.

The other encounter was failure by some respondents to participate in study due fear of Covid-19. The researcher ensured that the guidelines laid down by the Ministry of Health were strictly adhered to. Likewise, the researcher reached out to some respondents through WhatsApp and emails to minimize contact between persons.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This section explores the past literature review done by various scholars and is the pillar of academic researches to uncover existing works in the relevant field of study (Ogola, 2018).

2.2 Theoretical Review

Various theories have been advanced to justify the relationship between the role of tax intelligence and revenue collection. These theories shed light on the benefits of tax intelligence to various parties ranging from the parastatals to the economy and highlight evidence of how these kind of theories are greatly beneficial to various organizations. Shah & Shah (2020) note that a theoretical framework is the application of a set of concepts drawn from one and the same theory to offer an explanation of an event or shed some light on a particular research problem. The theories which advanced this research and enhanced understanding on tax intelligence were: economic deterrence theory, slippery slope framework (SSF) and resource dependency theory.

2.2.1 Economic Deterrence Theory

The theory signifies that tax behaviour is influenced by the probability of detection, tax penalty and tax rates. Base on the deterrence theory, the variation in crime propensity between individuals is dependent on the expected benefit or cost rather than the difference in motivation to commit crime. This implies that the theory asserts that an individual is rational in his/her decision and only aims at maximizing expected utility (Tefera, 2014). The deterrence model shows that risk-averse agents are more likely to comply than risk neutral agents, and it is plausible to assume that taxpayers are risk-averse. But the levels of risk aversion necessary to explain the observed levels of tax compliance are wholly implausible. It is also true that the probability of detection that determines behavior is the perceived rather than the actual one. But while evidence suggests that taxpayers generally overestimate audit probabilities, it also suggests that taxpayers with a greater opportunity to evade have a more realistic view of audit coverage (Sasaka, 2016).

In deterrence theory, detected and convicted offenders are penalized. Therefore, to reduce the rate of offences, either probability of detection or penalty rates should be increased. Because the increase in the severity of penalties and the probability of audit detection will result in fewer cases of tax non-compliance. Accordingly, taxpayers will comply more when there are sanction threats for non-compliance. Although taxpayers may know a number of ways to evade tax, they are not likely to do so if they know that non-compliant behaviour results in penalties. Although taxpayers may know a number of ways to evade tax, they are not likely to do so if they know that non-compliant behaviour results in penalties (Mahmoud, 2019).

This theory is relevant to this study since it explains how tax authorities use analytics tools to obtain taxpayer behaviors relating to compliance checks and tax evasion. It involves data mining techniques to obtain tax data from mass media, the internet, third-party sources. It can also help with transparency, which more countries and international organizations are using to decrease tax evasion and tighten the international community. Many countries are working on initiatives to share data securely within and outside of its borders. For example, OECD has been driving an initiative called Base Erosion and Profit Shifting (BEPS) to fight tax avoidance that exploit gaps and mismatches in tax rules between countries. Predictive modelling is used for investigating errors and fraud while predictive analytics is used to make predictions about future outcomes based on historical data and analytics techniques. All these are aimed at gaining ground on taxpayers' behaviours so as to increase probability of detection of non-compliant taxpayers. This will result to minimal tax cheats since probability of detection will be high leading to improved revenue collection (KRA, 2019).

2.2.2 Slippery Slope Framework (SSF)

It was introduced to address the need for combining the use of economic and behavioral factors associated with tax compliance (Njenga, Waiganjo, & Koima, 2015). This framework includes a number of economic and behavioral factors – perception of audit probabilities, tax penalties, tax knowledge, attitudes, norms, distributive fairness, procedural fairness, and retributive fairness – that shape the level of taxpayers' trust in tax authorities and/or their perception of the power of tax authorities. All these factors are then considered in the framework and linked to trust and power in a relationship (Gatheru, 2018).

According to the slippery slope framework both power and trust increase tax compliance though, the derived quality of compliance differs. Power is assumed to be strongly related to an antagonistic interaction climate, causing enforced tax compliance. An antagonistic interaction climate is characterized by tax authorities perceiving taxpayers as “robbers” motivated to evade whenever the opportunity arises. Taxpayers, on the other hand, feel persecuted by the authorities, perceived as “cops”, and search for possibilities to escape the pressure to obey. Contrary to power, trust is assumed to strongly relate to a synergistic climate, causing voluntary tax compliance. If authorities are perceived as engaged for the good of the society, taxpayers are willing to cooperate by contributing their share to the community.

The theory is relevant to this study as pre-supposes that the best thing to do at a time depended on the situation (Sasaka, 2016). The objectives of tax intelligence are detection done through interviews, surveillance, execution of search warrants, analysis of financials, review of taxpayer records, and obtaining third party information. Deterrence against tax evasion and other fraudulent activities to ensure compliance through prosecution, imposition of penalties, taxpayer education and awareness as well as media publicity among others and finally enhancing compliance through unearthing emerging evasion schemes and recommend measures to seal loopholes through administrative action or amendment of laws. KRA has employed many resources ranging from human such as whistle blowers to technological such as intelligence gathering system, anonymous reporting system, setting up a cyber-command center to enhance data security and case management system. The government has also set robust prosecution and intelligence driven investigation framework. They include setting up a digital forensic laboratory to facilitate the examination of digital data, enhancing laboratory testing services for improved compliance, and improving collaborative arrangements with other private agencies (KRA, 2019).

2.2.3 Resource Dependency Theory

Resource dependence theory is the study of how the external resources of organizations affect their behaviors (McDowl, 2017). The procurement of external resources is an important tenet of both the strategic and tactical management of any company. The assumption of this theory is that dependence on essential resources impact actions of organizational decisions and their elaboration depends on the particular dependency situation. Organizations are unable to produce all the resources they need to operate and hence they must engage in exchanges with the external

environment so as to acquire the resources they need to survive. Hence, the theory stresses the importance of looking at the environment in which an organization operates when trying to explain behavior and impact. The survival of most organizations depends on their ability to attract the resources needed to support their operations (Gatheru, 2018).

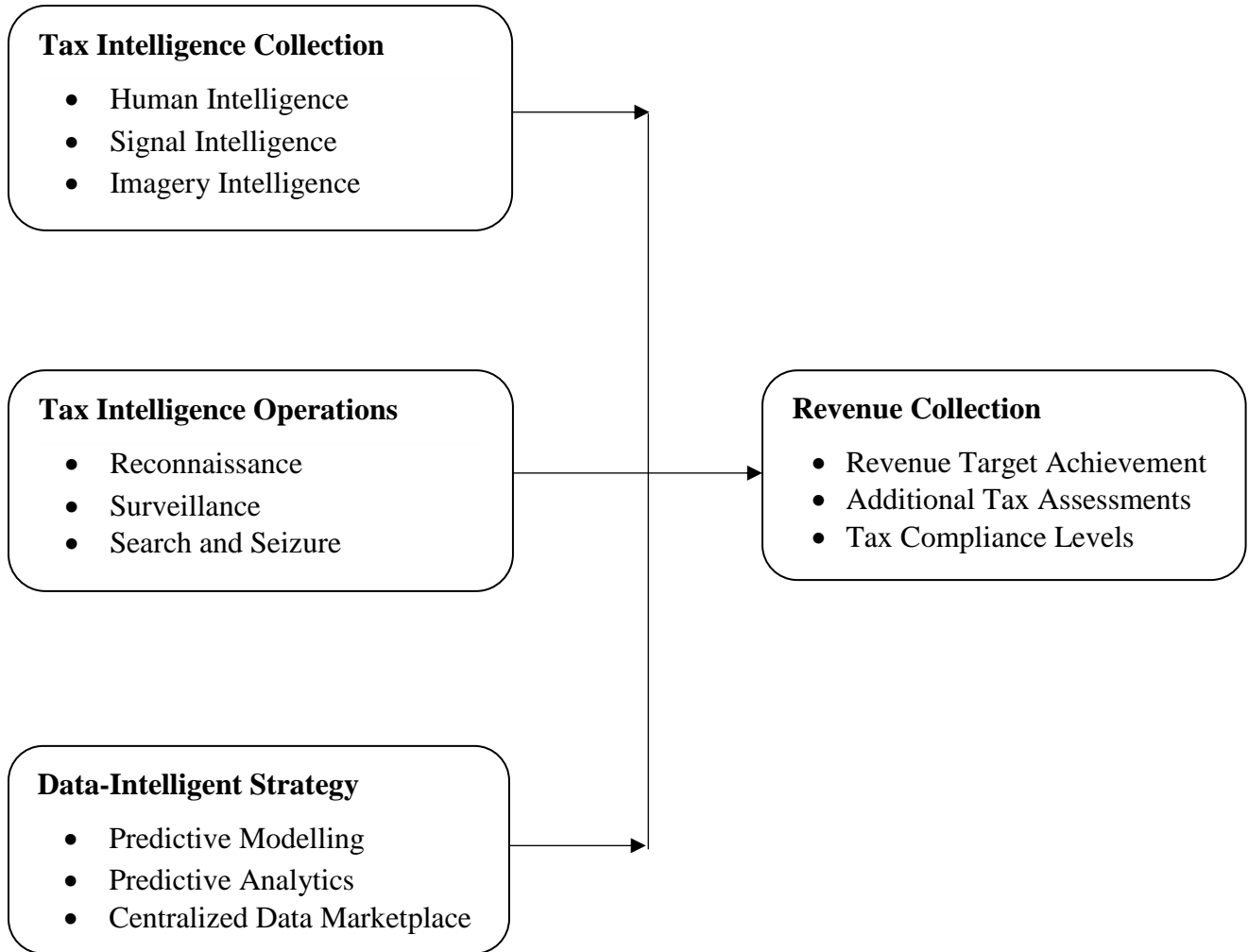
This theory explains further the usefulness of the environmental linkages of organizations with the outside resources which when effectively used could provide the institution with its competitive advantage (Plance, 2019). In this light, an organization may have ideas of operating efficiently but without the resources to implement such ways, the targets are greatly compromised. There are three facets of an organization's dependence of inter-organizational networks which are dependence on the environment; dependence on the other members (mutual dependency); and dependence on the network (asymmetric dependence between the network and member organizations). This theory is important to this study since it explains how the organization can utilize its resources to enhance performance (Klein & Pereira, 2018).

The theory is relevant to this study as KRA has employees who are skilled in different fields and coupled with advancement in technology, revenue collection may be enhanced. Due to increased cases of tax evasion, the taxman depends much on tax intelligence operations to collect evidences which include, reconnaissance, surveillance and search and seizures. This requires obtaining external resources to facilitate its smooth and effective operation for its success. The external collaboration includes: Enforcement agencies such Kenya Police and occasionally Interpol in raiding premises and effecting arrests on persons suspected of committing tax frauds. Anti-Banking Fraud, and Money Laundering units assist KRA in safeguarding revenue by monitoring banking transactions and reporting to KRA any case of cheque diversion and money laundering: The Director of Public Prosecutor cooperates with KRA in facilitating prosecution of suits where taxpayers have objected to tax assessments and opted for litigation: Finally, operations of financial institutions are key to proper revenue administration whereby banks also cooperate with KRA on provision of data that supports addressing specific tax evasion cases (Gituru, 2019).

2.3 Conceptual Framework

The conceptual framework reveals the connection and relation that exists between the dependent and independent variables. It's a comprehensive set of ideologies taken from appropriate fields of

examination and subsequently used to structure a presentation (Kothari, 2014). The purpose of the study is to assess the nature and the strength of the relationship between revenue collection and tax intelligence collection, tax intelligence operations and data-intelligent strategy.



Independent variables

Dependent variable

Figure 2.1: Conceptual Framework

2.4 Review of Variables

2.4.1 Tax Intelligence Collection

Tax intelligence is the activity of gathering information, which aims to counsel the tax administration in the planning and execution of its legal powers, especially in combating tax

avoidance, tax evasion, and terrorist financing (CIAT, 2018). The objectives of tax intelligence are detection done through interviews, surveillance, execution of search warrants, analysis of financials, review of taxpayer records, and obtaining third party information. Disruption aimed at identifying tax evasion schemes and dismantling the cartels. Deterrence against tax evasion and other fraudulent activities to ensure compliance through prosecution, imposition of penalties, taxpayer education and awareness as well as media publicity among others and finally enhancing compliance through unearthing emerging evasion schemes and recommend measures to seal loopholes through administrative action or amendment of laws (KRA, 2019).

Human Intelligence is intelligence gathered by means of interpersonal contact, a category of intelligence derived from information collected and provided by human sources (Gatheru, 2018). Collection includes clandestine acquisition of photography, documents, and other material; overt collection. KRA has over the years invested in competent personnel intelligence officials/spies with tax intelligence and investigative knowledge acquired through training and experience. Education is the most consistent, robust, and durable method known for raising intelligence and KRA has consistently trained its staff through KESRA to widen their intellectual capability and scope in tax and customs administration (Gitaru, 2017). It has also trained its staff on tax intelligence and investigative operations as well as recruiting trained intelligence officials. Also KRA has an informer management framework for handling, recruitment and managing informers.

Signals intelligence is the intelligence-gathering procedure done by the interception of signals, whether communications between individuals or from electronic signals (Wallace, 2019). Communications intelligence is a sub-category of signals intelligence that engages in dealing with messages or voice information derived from the interception of foreign communications. While electronic signals intelligence refers to intelligence-gathering by use of electronic sensors. Its primary focus lies on non-communications signals intelligence. They are aimed at giving information of who is transmitting; where they are located, and, if the transmitter is moving, the report may give a plot of the signal against location; if known, the organizational function of the transmitter; the time and duration of transmission, and the schedule if it is a periodic transmission; and the frequencies and other technical features of their transmission. Voice interception which is a basic technique is to listen for voice communications, usually over radio but possibly leaking from telephones or from wiretaps. If the voice communications are encrypted, traffic analysis may

still give information. Text interception specialists scan radio frequencies for character sequences such as electronic mail and fax. And finally signaling channel interception (Buyondo, 2019).

Imagery intelligence is an intelligence gathering discipline wherein imagery is analyzed or exploited to identify information of intelligence value (Gitaru, 2019). These sources are data and/or information gathered with the utilization of a specific Intelligence activity called Imagery Intelligence. They come basically from photography, films and satellite images of photographic equipment, radars, infrared sensors and others. Photography and filming techniques may be used either in a low-profile manner, seeking evidence during the investigations to prove violations or when it is useful for the compliance of judicial search and seizure warrants. Its discreet use may take place at distance or in a camouflaged manner. In this case, the images are recorded with the use of portable objects, from an operational vehicle or real estate that may serve as support. Usually, the individual rights and guarantees related to privacy do not forbid taking pictures or film exposed parts of houses and offices. Therefore, the recording of images of events occurred in these environments visible by the public would not be considered illicit evidence. However, it is important before making use of documents provided by this technique, to verify with the courts orientation, through consultation with specific jurisprudence (CIAT, 2018).

2.4.2 Tax Intelligence Operations

Tax Intelligence operation is the method of searching of denied data which is information of interest for the tax administration but not available in open sources because the holders have hidden them (CIAT, 2018). This search is done by means of a wide fiscal investigation. The tax intelligence operations must develop an intelligence information system, preferentially in a computerized format and integrated in a network to allow its agents to use it, not only for operational purposes, but for analysis as well. This system's project would make possible the management of every incoming communication whose investigation or forwarding is under tax intelligence's responsibility: reports on suspect financial operations, warning of alert, reports on a typical transactions and elements that permit to consolidate signs or evidences related to the practice of tax illicit activities. The objective is to obtain evidences that provide basis for a civil tax examination or for the beginning of a judicial criminal process (CIAT, 2018). There are various methods used in tax intelligence operations by the taxman like reconnaissance, tax surveillance and search and seizure.

Reconnaissance is the technique used in gathering of data on the target and on the operational environment, to guide the planning of a subsequent specialized action within the same investigation (Adebolu, 2018). It consists in the exploration or inspection of a given area of interest in order to gather all the information relevant to that phase of the investigation. It is conducted in accordance with the mission's aim, and has as usual purposes: the identification of the target, his general habits, the users of the operational environment, the means of transport used by them, schedules of coming in and going out of the place, its accesses, existence of security, possibility of using a near building or support vehicle and suggestions for undercover activities. They may be done through visits at a distance, usually by using optical instruments that allow the observation or the registration of images at a safe distance. Depending on the means available and the type of reconnaissance requested, airplanes or even satellites may be used. These instruments are useful when setting down parameters for the territorial or rural property tax (Appah, 2016).

Tax surveillance is monitoring of taxpayers' behaviour, activities or information for the purpose of information gathering and keeping the target under observation (Klein & Pereira, 2018). Its main purposes include: identify targets, verify their illicit activities, hidden assets and contacts; identify the means of communication used by the targets; to determine activities and routines undertaken at facilities and areas observed; to identify the places where clandestine activities are being held; to get information to be used later, during an interview; to verify the loyalty of the informer and identify counter surveillance. The notes related to the surveillance must be taken in a daily basis, in detail. At the end of the operation, the agent should prepare a report including the gathered data and the conclusions about the observed events. Whenever possible, a counter-surveillance group should be organized to safeguard the security of agents and equipment involved in the main surveillance. Such precaution is especially necessary in cases of open fixed surveillance, such as carried out in a place where, potentially, they could be seen by the target (Kioko, 2019).

Search and seizure is a method used by the tax authorities when they suspect any economic crime, they pursue a persons' premises and confiscate any relevant evidence in connection to the crime (Adebolu, 2018). The techniques employed in a search and seizure action occur when the investigation in tax intelligence operations designed to search for evidence of illicit practices. They are aimed at obtaining denied data that assure the precise determination of the tax liability, the

search and seizure technique also seeks to collect evidences that may be used in a criminal procedure. Usually a court order, has power to authorize tax agents to access the facilities used by the suspects for the search and seizure of documents, magnetic means or equipment. The files copied during a search warrant must be perfectly identical to that located on original magnetic means. These so-called mirror copies will avoid allegations that the seized files were modified. These techniques are meant to increase the chances of getting the largest amount of information on such targets. Their efficient will increase, substantially, the chances of selecting companies or individuals with higher possibility of being involved in illicit activities (CIAT, 2018).

2.4.3 Data-Intelligent Strategy

Data intelligent strategy refers to analytics tools and methods employed by tax authorities to obtain taxpayer behaviors relating to compliance checks and tax evasion. It involves data mining techniques to obtain tax data from mass media, the internet, third-party sources such as banks and digital channels such as social media (Preimesberger, 2018). Tax administrations that effectively deploy a data-intelligent strategy improve their competence and success by: Growing taxpayers' satisfaction, helping administrators better understand taxpayers, maximizing risk detection and intelligent audits and improving macro socio-economic predictability to close the tax gap. It can also help with transparency, which more countries and international organizations are using to decrease tax evasion and tighten the international community. Many countries are working on initiatives to share data securely within and outside of its borders. For example, OECD has been driving an initiative called Base Erosion and Profit Shifting to fight tax avoidance that exploits gaps and mismatches in tax rules between countries (OECD, 2016).

Predictive modelling is used for investigating errors and fraud. Its benefits include the ability to: Obtain a 360-degree view of a taxpayer by accessing insights from large datasets, detect fraud by integrating current data with Social Network Analysis. Provide unsupervised learning methods to identify new, unknown types of risk and interesting/anomalous patterns in data. Detect and remediate errors for filing and payment compliance, offer risk modelling and controlled experimentations to identify cases and/or taxpayers likely to fail and the interventions that can remedy the situation (OECD, 2016). Centralized data marketplace is made possible through the implementation of a centralized data marketplace that is managed by the IT team—ensuring data governance and compliance requirements are met. Many tax administrations actively work in that

direction by pre-compiling filing with data integrated from various data sources e.g. banks, pension agencies, and other government partner agents and is stored in a central place to facilitate easy access by many tax departments for easier decision making. This helps the government act faster on issues of tax evasion and other financial crimes (Buyondo, 2019).

Predictive analytics is a category of data analytics aimed at making predictions about future outcomes based on historical data and analytics techniques such as statistical modeling (Edwards, 2019). Predictive analytics makes looking into the future more accurate and reliable than previous tools. Tax authorities are using real-time data analytics engines to validate invoices and lag discrepancies, verify sales and purchase declarations, verify payroll and withholding declarations and compare data across jurisdictions and taxpayers. Based on these analyses, tax authorities make determinations, including tax and audit assessments hence improving compliance levels amongst taxpayers (Buyondo, 2019). Advanced analytics impact tax administrations in scenarios such as: Auditing where tax administrations can extract insights from large datasets, assess the next-best alternative, analyze social networks or predict unreported income. Filing and payment compliance where analytics can change taxpayer behavior to increase compliance with programs for risk modelling and investigation in taxpayer communication. And taxpayer segmentation where tax administrations can identify groups based upon similarities on set criteria (OECD, 2016).

2.4.4 Revenue Collection

Revenue collection is the process through which the government generates finances from people and businesses implemented by a government agency such as Kenya Revenue Authority in Kenya (Gatheru, 2018). Tax collection is divided into domestic taxes and custom duty. In direct taxes, the burden falls on the taxpayer, it cannot be transferred to another, they include individual income tax, corporate tax while on indirect tax, the burden of tax falls on the final consumer, and they include value added tax, and excise duty. To maximise tax collection and minimise cost, the government has improved efficiency of tax administration by employing competent personnel and embrace modern technology in tax collection.

Additional tax assessment is the process by which the government department of taxation, declares that a taxpayer owes additional tax because, for example, the individual has understated personal gross income or has taken deductions to which he or she is not entitled (Gituru, 2019). Although the Kenyan tax system is a self-assessment system where a taxpayer assesses himself or herself

and makes payments to KRA. However, some individuals or business entities abuse the trust bestowed on them by the law to under declare or not to declare their income hence evading payment of taxes. The taxpayer has been audited or investigated and the taxman is confident that there is evidence of tax evasion through an elaborate engagement whereby documents, records and any other relevant documents are verified of self-assessment. Where gaps are identified, leading to tax liability, the taxpayer is informed both orally and in writing and is requested to respond to the issues before an assessment or demand is issued. Thereafter the taxpayer is informed of his or her right to object to the demand or assessment. The taxpayer has the option of paying the taxes or objecting to the demand or assessment and appealing to the Tax Appeals Tribunal (Maina, 2019). Successful additional tax assessment has resulted to increased revenue collection by the Kenya Revenue Authority and stimulate economic development.

Revenue targets means the amount of actual gross taxes to be derived by the KRA and collected from taxpayers in a given financial year (KRA, 2019). The revenue targets are usually set by the National Treasury, which is the parent company of KRA. Although the revenue targets are achievable, due to non-compliance and tax evasion, KRA has continuously missed its revenue collection target, in the financial year continuously missed its revenue collection target, in the financial year 2015/2016 the taxman missed its revenue collection target by Kshs 12 billion, by Kshs 67 billion in 2016/2017 and Kshs 106 billion in 2017/2018. Although in the financial year 2018/2019, revenue collection grew by 11%, this was still short of the revenue target of 1.643 trillion, where the authority collected 1.58 trillion. Improved tax intelligence efforts made by the taxman will seek to improve revenue collection and stimulate economic development (Buyondo, 2019). With increase in tax intelligence, KRA will be able to achieve their revenue targets as cases of tax evasion will be minimum resulting to more tax collection.

Tax compliance is the timely filing and reporting of required tax information, the correct self-assessment of taxes owed, and the timely payment of those taxes without enforcement action (Simiyu & Jagongo, 2017). Timely filing of returns occurs when an authorized electronic return transmitter receives the e-filed document on its host system on or before the due date (Waso, 2014). Due to the introduction of information communication technology, tax filing has been simpler than before since taxpayers can file their returns anywhere and anytime as long as they have internet connection. Timely payment of returns refers to the payment of all tax returns filed on or before

the due date (Atawodi & Ojeka, 2012). The payments can be made through the mobile money transfers such as Airtel money or through bank transfers like real time gross settlement. Persons who comply with all these are issued with a tax compliance certificate that is valid for a period of twelve months, which is a proof that they have complied with all tax obligations. With the robust tax intelligence operations, taxpayers have been forced to be tax compliant so that they could a tax compliance certificate which is a requirement for persons to transact their businesses. This in turn has led to increased revenue collection by the Kenya Revenue Authority.

2.5 Empirical Review

A study by Maina (2019) on the impact of tax intelligence operations on efficiency of revenue collection at Domestic Taxes Department at Kenya Revenue Authority. The specific objectives of the study were: To determine the impact of reconnaissance, surveillances and search and seizure on efficiency of revenue collection at Domestic Taxes Department at Kenya Revenue Authority. The study adopted a descriptive research design and primary data were collected by administration of questionnaires. The study found out that tax intelligence operations impacts on efficiency of revenue collection at Domestic Taxes Department at Kenya Revenue Authority. The study has found out that a combine impact of artificial intelligence system, data-intelligent system and human intelligence system had a joint positive significant impact on revenue generation in Mombasa.

A study by Nishimwe (2019) on the effect of data intelligent strategy in revenue collection by Rwanda Revenue Authority in Rwamagana. The specific objectives of the study were: To establish the effect of predictive analytics on data-intelligent strategy in revenue collection by Rwanda Revenue Authority in Rwamagana. To determine the effect of centralized analytics structure on data-intelligent strategy in revenue collection by Rwanda Revenue Authority in Rwamagana. And to assess the effect of predictive modelling on data intelligent strategy in revenue collection by Rwanda Revenue Authority in Rwamagana. The study adopted a descriptive research design and data were collected through questionnaires. The findings of the study show that predictive analytics, centralized analytics structure and predictive modelling have a positive significant effect on revenue collection by Rwanda Revenue Authority in Rwamagana.

A study by Gitaru (2019) on the impact of intelligence gathering system on revenue generation by Kenya Revenue Authority in Mombasa. The specific objectives of the study were: To establish the

impact of artificial intelligence system on revenue generation by Kenya Revenue Authority in Mombasa. To determine the impact of human intelligence system on revenue generation by Kenya Revenue Authority in Mombasa. To assess the impact of data-intelligent system on revenue collection by Kenya Revenue Authority in Mombasa. The study adopted a descriptive research design and data were collected through questionnaires. The study findings established that there was a significant increase in the revenue generated after introduction of intelligence gathering system. The study has found out that a combine impact of taxpayer segmentation, data-intelligent strategy and informer management had a joint positive significant impact on revenue generation in Mombasa.

A study by Kioko (2019) on the impact of strategic management practices on custom tax collection at the Kenya Ports Authority, Mombasa. The specific objectives of the study were: To establish the impact of intelligence collection on custom tax collection at the Kenya Ports Authority, Mombasa. To assess the impact of data-intelligent strategy on custom tax collection at the Kenya Ports Authority, Mombasa. To determine the impact of tax intelligence operations on custom tax collection at the Kenya Ports Authority, Mombasa. The study adopted a descriptive research design and data were collected through questionnaires. The results of the study show that the expenditures by the tax authority on the intelligence collection, data-intelligent strategy and tax intelligence operations had a positive and statistically significant impact on custom tax collection at the Kenya Ports Authority. The relationship between the three variables and custom tax collection is positive, implying that as the taxman increases its expenditure on intelligence collection, data-intelligent strategy and tax intelligence operations will result to the growth of custom tax revenue in KPA.

2.6 Critique of Existing Literature Relevant to the Study

A study by Maina (2019) on the impact of tax intelligence operations on efficiency of revenue collection at Domestic Taxes Department at Kenya Revenue Authority. The study recommends that KRA should adopt technological tools that enhance their performance particularly that which increases compliance among tax payers. Customer service should be improved as a strategic goal and foster its strategic partnership with stakeholders so as to reduce the revenue collection successfully. The study contradicts the mandate of KRA which is to increase revenue. The study hence is not clear whether it is revenue collection cost which should be reduced or revenue collection.

A study by Nishimwe (2019) on the effect of data intelligent strategy in revenue collection by Rwanda Revenue Authority in Rwamagana. The study recommends that the intelligence reports be submitted to the public and a standard procedure to be found in choosing the companies that random investigation is conducted. This is to assure the public that those investigated randomly are not eyed or discriminated but at least they see the result and be aware of the procedures used in the selection. This will be unreasonable since companies will master the procedures and criteria for selection in investigation to dodge the taxman's sight.

A study by Gitaru (2019) on the impact of intelligence gathering system on revenue generation by Kenya Revenue Authority in Mombasa. The study recommended that the government should intensify intelligence through, the employment of more competent staff and intermittent training in order to cause increase in tax compliance level in the State. Tax evaders and avoiders should be seriously dealt with so as to deter others from plodding the same criminal path. The study fails to take into account that ethical and moral taxpayers will be tax compliant even if chances of detection are minimal. The government should then focus on changing taxpayers' attitude towards taxation hence breed a tax compliant culture.

2.7 Research Gaps

A study by Maina (2019) on the impact of tax intelligence operations on efficiency of revenue collection at Domestic Taxes Department at Kenya Revenue Authority. The study found out that tax intelligence operations impacts on efficiency of revenue collection at Domestic Taxes Department at KRA. The study focused only on Domestic Taxes Department at Kenya Revenue Authority which one of the department in the Authority. The current study will cover the whole of KRA departments at large as their main mandate is revenue collection. With cooperation of all departments, KRA can achieve greater efficiency in revenue collection leading self-sustenance.

A study by Nishimwe (2019) on the effect of data-intelligent strategy in revenue collection by Rwanda Revenue Authority in Rwamagana. The findings of the study show that predictive analytics, centralized analytics structure and predictive modelling have a positive significant effect on revenue collection by Rwanda Revenue Authority in Rwamagana. The study was done in Rwanda which faces different challenges from Kenya and Rwanda Revenue Authority is different from KRA. The current study will be done in Kenya and try to fill the contextual gap.

A study by Gitaru (2019) on the impact of intelligence gathering system on revenue generation by Kenya Revenue Authority in Mombasa. The study findings established that there was a significant increase in the revenue generated after introduction of intelligence gathering system. The study used secondary data ranging a span of ten years from 2008 to 2018. The current study will use primary data as the main data collection method since the data will be collected in 2020 hence taking into consideration of technological innovation and academic advancement of tax matters.

A study by Kioko (2019) on the impact of strategic management practices on custom tax collection at the Kenya Ports Authority, Mombasa. The results showed that the expenditures by the tax authority on the intelligence collection, data-intelligent strategy and the management operations had a positive and statistically significant impact on customs tax collection at the Kenya Ports Authority. The study was done at the port of Mombasa and focused on customs tax revenue. The current study will be done in Southern Region Headquarters and will focus on revenue collection by KRA as a whole.

2.8 Summary

This chapter has presented a preview of pertinent literature on the role of tax intelligence in revenue collection and various research theories have been presented. The section has highlighted the role of intelligence collection on revenue collection. The section also discusses the role of strategic operations on revenue collection. It also highlights the role of data-intelligent strategy on revenue collection. A conceptual framework was drawn to speculate the relationships amongst the dependent and independent variables. An empirical review was done where past studies relevant to the study were reviewed which led to a critique and finally resulting to research gaps which the current study aims to bridge.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter describes the methodology that was utilized in the study. It includes research design, population, sample & sampling technique, data collection procedures and data analysis.

3.2 Research Design

The research design is the outline or devise employed by the researcher to help structure and design the work in order to suit the objective and aims of researcher's work (Chava, 2019). It is fundamentally the blueprint of carrying out any academic study and its suitability is guided by factors such as the topic and research objectives, scope among others. Descriptive research design was employed in this study. This was valuable as it allowed the researcher to observe the subject in their natural form without manipulating the variables (Kothari, 2014). It describes the behavior or characteristics of a group to determine the relationships that exist between different factors and establish statistical relationships based on quantitative measures of two or more parameters. The significance of the descriptive research design is the ability to ensure minimization of bias and maximization of reliability of evidence collected. Again, it is appropriate for answering the 'what' and 'why' kind of research questions posed in the chapter one (Bryman & Bell, 2015).

3.3 Population

Population is defined as an abstract idea of a given group which has observable characteristics which are distinguishable from others from which a sample is drawn (Ogola, 2018). The population of this study was all Kenya Revenue Authority officials from the Southern Region Headquarters in Mombasa as detailed in KRA human resource records in 2020.

Table 3.1 Target Population

Category	Target Population
Top Management	16
Middle Management	134
Lower Management	483
Total	588

Source: KRA Human Resource Database, 2020

3.4 Sampling Frame

Sampling frame is a list of all the items in a population from which a sample is drawn from (Kiarie, 2018). The sampling frame for this study was a list of all Kenya Revenue Authority employees as detailed in Kenya Revenue Authority human resource records in 2020.

3.5 Sample Size and Sampling Technique

Sample refers to the number of elements selected from a given population while sampling refers to the process by which part of the population is selected and conclusions are drawn about the entire population (Kiarie, 2018). The study used Yamane formula and the sample size as shown below assuming confidence level of 95% and precision level of $e = 0.05$. The formula was employed because it was easy to use and understand based on the confidence interval selected (Mustafa, 2017).

Yamane Sampling Formula:

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

Where;

N- is the population size.

n- is the sample size.

e- is the level of precision.

$$\frac{588}{1 + 588(0.05)^2} = 238$$

Stratified random sampling technique was used in this study and the population grouped into three strata consisting of top, middle and lower management.

Table 3.2 Sample Size

Strata	Target Population	Sample Size
Top Management	16	7
Middle Management	134	54
Lower Management	438	177
Total	588	238

3.6 Data Collection Instruments

Data collection instruments refer to the devices applied in the process of gathering data after the researcher has identified the types of information needed (Waiyaki, 2017). Data collection is an important step in the research process. The instrument you choose to collect the data will depend on the type of data you plan on collecting qualitative or quantitative and how you plan to collect it. A number of common data-collecting instruments used in research include questionnaires, interviews, observations, laboratory experiments, and archival documents quasi experiment and government sources. The study adopted a structured questionnaire to collect primary data as it is appropriate to collect data from large respondents. Likewise, large quantity of evidences can be collected from a large number of people in a shorter period of time and in a relatively cost effective way (Kothari, 2014). Likert type scale was used to answer questions from section B because it was used to measure attitudes and opinions with a greater degree of nuance than a simple yes or no answer.

3.7 Data Collection Procedures

This is the systematic collection of desired information applicable to the study using data collection instruments (Chava, 2019). The research process for this study began by the researcher seeking permission from Kenya Revenue Authority Human Resources Manager to carry out the study. In order to facilitate data collection; using the letter of introduction from KESRA, the researcher introduced himself to familiarize and explain the purpose for carrying out the study. The questionnaires to respondents were self-administered and physically collected from all respondents and checked for errors. The few that had missing data were returned to the respondents for completion and thereafter picked.

3.8 Pilot Study

Pilot study is conducted so that the weaknesses in research design and data collection instruments are pinpointed and corrected before the main study is carried out (Neuman, 2014). It allows the researcher to make necessary revisions prior to the implementation of the study. Kothari (2014), asserted that conducting a pilot study involved a few of the target population being given the questionnaires with an intention of pre-testing it. A pilot study was accordingly undertaken on 24 respondents in the lower management who did not take part in the main study to test for reliability and validity of the questionnaire.

3.8.1 Validity

Validity is the instruments or scale by which one can measure the outcomes of a certain research hypothesis about how strong the outcomes are. With the help of validity, one can answer the question such as are we right about the research methodology or the outcomes. Validity is more concerned whether the measure has been done with the right concept or not (Chan & Idris, 2017). Validity test was conducted through factor analysis using KMO and Bartlett's Test.

3.8.2 Reliability

Reliability is the scale or instrument of measurement that is consistent with its result. It means if any test is taken using any instrument for a particular subject and the result of the test will be similar in every attempt then it will be considered as reliable. Reliability is more concerned with the consistency and the stability of the test result (Chan & Idris, 2017). Cronbach's Alpha values was used to test for reliability and values above 0.70 are sensible to offer reliable results.

3.9 Data Analysis and Presentation

Data analysis is the process through which a scholar summarizes raw data in a way that makes sense and meaning (Leary, 2015). In other words, data analysis methods are a way of giving meaning to research data. Quantitative statistics were assembled, tabulated, coded and examined using SPSS version 25 and then analyzed and presented using descriptive and inferential statistics using correlation and regression analysis. The R squared analysis was used to measure the goodness of fit of the model being assessed. Multiple linear regression analysis was carried out to determine the form of the mathematical model that defines the relationship between the dependent and independent variables. The multiple regression formula was presented as shown below;

Regression model:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \epsilon$$

Where;

Y – Revenue Collection

β_0 – Constant Term

$\beta_1, \beta_2, \beta_3$ – Correlation Coefficients

X_1 – Tax Intelligence Collection

X_2 – Tax Intelligence Operations

X_3 – Data-Intelligent Strategy

ϵ – Error term

CHAPTER FOUR

RESEARCH FINDINGS AND ANALYSIS

4.1 Introduction

This chapter deals with the results and discussion of the data. The findings were presented based on the three specific objectives of the study. It also provides information about the study on respondent's background information, descriptive statistics and inferential statistics.

4.2 Response Rate

In this research out of 238 questionnaires administered to the respondents, a total of 179 were positively returned for data analysis which represented a 75.21% response rate. For generalization purposes, response rate of 50% is sufficient for data analysis, a response rate of 60% is good while a response rate of above 70% is excellent (Leary, 2015). Consequently, this study had an excellent response rate as it was above 70%. All the 179 questionnaires were fully answered and hence used for data analysis. Of the other 59 questionnaires 47 were not returned while 12 were incomplete and, therefore, could not be included in the data analysis.

Table 4.1 Questionnaire Response Rate

	Frequency	Percentage
Respondent	179	75.21
Non-respondent	59	24.79
Total	238	100

4.3 Pilot Results

Pilot study is conducted so that the weaknesses in research design and data collection instruments are pinpointed and corrected before the main study is carried out (Neuman, 2014).

4.3.1 Reliability Analysis

Reliability is the scale or instrument of measurement that is consistent with its result. It means if any test is taken using any instrument for a particular subject and the result of the test will be similar in every attempt then it will be considered as reliable. Reliability is more concerned with the consistency and the stability of the test result (Chan & Idris, 2017). The study produced

Cronbach's alpha values of above 0.70, therefore indicating that there was high reliability of the data collection instrument.

Table 4.2 Reliability Results

Scale	Cronbach's Alpha	Comments
Tax Intelligence Collection	0.824	Accepted
Tax Intelligence Operations	0.787	Accepted
Data-Intelligent Strategy	0.813	Accepted
Revenue Collection	0.801	Accepted

4.3.2 Validity Results

Validity is the instruments or scale by which one can measure the outcomes of a certain research hypothesis about how strong the outcomes are (Chava, 2019). For a test to be valid it must first pass the reliability test, and from the above analysis, our questionnaire was reliable hence we proceeded with the validity test using KMO and Bartlett's Test. Factor analysis' most crucial role is to decrease excessively correlated data and substitute with uncorrelated variables (Kothari, 2014). Kaiser-Meyer-Olkin Measure of Sampling Adequacy was 0.712, more than 0.60, which signifies suitable items for each factor. Bartlett's Test of Sphericity taking a 95% significance level, p-value of $.000 < 0.05$, indicates that the correlation matrix is considerably different from the identity matrix, and the correlations between the variables are zero as a result, the factor analysis was valid.

Table 4.3: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.712
Bartlett's Test of Sphericity	Approx. Chi-Square	1023.639
	Df	22
	Sig.	.000

4.4 Demographic Characteristics of Respondents

4.4.1 Level of Education

Table 4:4, indicates the level of education for the respondents. Majority of the respondents had an undergraduate degree representing 55.86%, 30.17% had postgraduate degree, while 13.97% had a diploma. The findings indicate that the respondents were skilled and knowledgeable enough to read, understand and correctly fill the questionnaires as required.

Table 4.4: Level of Education

	Frequency	Percentage
Diploma	25	13.97
Undergraduate	100	55.86
Postgraduate	54	30.17
Total	179	100

4.4.2 Work Experience

Table 4.5 indicates that, a majority of the respondents had worked at KRA for between 4-8 years with a 49.72%, 28.49% of the respondents had worked at KRA for between 9-15 years, while 12.85% of the respondents had worked at KRA for below 3 years and 8.94% of the respondents had worked at KRA for above 15 years. These findings indicate that the respondents had worked with KRA for enough time and thus could articulate the role of tax intelligence in revenue collection by KRA.

Table 4.5: Work Experience

Scale	Frequency	Percentage
Below 3 years	23	12.85
4-8 years	89	49.72
9-15 years	51	28.49
Above 15 years	16	8.94
Total	179	100

4.5 Descriptive Analysis

4.5.1 Tax Intelligence Collection

The first objective of the study was aimed at establishing the role of tax intelligence collection in revenue collection by Kenya Revenue Authority in Mombasa County. The objective was determined by posing several statements related to tax intelligence collection. A Likert scale was used to rate this variable's effects on a scale of 5 point within a range of; 1= strongly disagree which was the lowest scale and 5 = strongly agree which was the highest scale and were analyzed using the mean score. The closer the mean score on each score was to 5, the stronger the agreement was to the statement posed. A score of around 2.5 would indicate uncertainty while scores significantly below 2.5 would suggest disagreement with the suggested statements.

Table 4.6: Tax Intelligence Collection

	Mean	Standard Deviation
Signal intelligence is a very convincing form of evidence about tax evasion schemes as it provides almost instantaneous information.	4.31	.576
Signal intelligence is useful since the emitter location can be pinpointed hence easy to track the tax evasion scheme with accuracy.	4.11	.673
Human intelligence has the ability to spot anomalies that are missed by rigid algorithms thus capable of detecting potential tax evasion schemes.	4.43	.784
The authority has an elaborate informer management framework which governs intelligence collection through informers.	4.26	.814
Imagery intelligence is highly credible form of tax intelligence collection as the evidence can be seen by the end user.	4.51	.684
Imagery intelligence is very reliable since the environmental physical features can be studied in details thus provide more evidence about the target.	4.35	.931
Average	4.33	.743

The results in Table 4.6 show that the respondents agreed that signal intelligence is the most convincing form of evidence about tax evasion schemes as it provides almost instantaneous information with a mean of 4.31 and standard deviation of 0.576. Signal intelligence is useful since the emitter location can be pinpointed hence easy to track the tax evasion scheme with accuracy with a mean of 4.11 and standard deviation of 0.673. Human intelligence has the ability to spot anomalies that are missed by rigid algorithms thus capable of detecting potential tax evasion schemes with a mean of 4.43 and standard deviation of 0.784. The authority has an elaborate informer management framework which governs intelligence collection through informers with a mean of 4.26 and standard deviation of 0.814. Imagery intelligence is highly credible form of tax intelligence collection as the evidence can be seen by the end user with a mean of 4.51 and standard deviation of 0.684. Finally, they agreed that imagery intelligence is very reliable since the environmental physical features can be studied in details thus provide more evidence about the target with a mean of 4.35 and standard deviation of 0.931.

Likewise, the aggregate mean score of 4.33 and standard deviation of 0.743 signifies that tax intelligence collection has a considerable outcome on revenue collection by Kenya Revenue Authority in Mombasa County. The result was in tandem with Gitaru (2019) who established that there was a significant increase in the revenue generated after introduction of intelligence gathering system. The study has found out that a combined impact of artificial intelligence system, data-intelligent system and human intelligence system had a joint positive significant impact on revenue generation in Mombasa. Kioko (2019), further stated that the expenditures by the tax authority on the intelligence collection had a positive and statistically significant impact on custom tax collection at the Kenya Ports Authority.

4.5.2 Tax Intelligence Operations

The aim of the second study objective was to determine the role of tax intelligence operations in revenue collection by Kenya Revenue Authority in Mombasa County. This objective was determined by posing several statements related to tax intelligence operations. A Likert scale was used to rate this variable's effects on a scale of 5 point within a range of; 1= strongly disagree which was the lowest scale and 5 = strongly agree which was the highest scale and were analyzed using the mean score. The closer the mean score on each score was to 5, the stronger the agreement

was to the statement posed. A score of around 2.5 would indicate uncertainty while scores significantly below 2.5 would suggest disagreement with the suggested statements.

Table 4.7: Tax Intelligence Operations

	Mean	Standard Deviation
Reconnaissance helps tax officials gather all the information about taxpayers' operating environment relevant to the phase of investigation.	4.22	.556
Reconnaissance aids tax officials to know the targeted taxpayers' schedules of operation thus help in undercover activities in their premises.	4.34	.868
Tax surveillance aids tax officials to identify the places where clandestine activities are being held.	4.25	.839
Tax surveillance aids tax officials to verify the illicit activities being undertaken by taxpayers.	4.17	.876
Search and seizure aids tax officials to hunt for evidence of illicit practices in various hideouts of taxpayers.	4.29	.809
Search and seizure aids tax officials to obtain denied tax data that assure the precise determination of the tax liability.	4.36	.713
Average	4.28	.776

The results in Table 4.7 indicate that the respondents agreed that reconnaissance has helped tax officials gather all the information about taxpayers' operating environment relevant to the phase of investigation with a mean of 4.22 and standard deviation of 0.556. Reconnaissance aids tax officials to know the targeted taxpayers' schedules of operation thus help in undercover activities in their premises with a mean of 4.34 and standard deviation of 0.868. Tax surveillance aids tax officials to identify the places where clandestine activities are being held with a mean of 4.25 and standard deviation of 0.839. Tax surveillance aids tax officials to verify the illicit activities being undertaken by taxpayers with a mean of 4.17 and standard deviation of 0.876. Search and seizure aids tax officials to hunt for evidence of illicit practices in various hideouts of taxpayers with a mean of 4.29 and standard deviation of 0.809. Finally, they agreed that search and seizure aids tax

officials to obtain denied tax data that assure the precise determination of the tax liability with a mean of 4.36 and standard deviation of 0.713.

Likewise, the aggregate mean score of 4.28 and standard deviation of 0.776 signifies that tax intelligence operations have a considerable outcome on revenue collection by Kenya Revenue Authority in Mombasa County. The findings support the results of Kioko (2019), who stated that the expenditures by the tax authority on tax intelligence operations had a positive and statistically significant impact on customs tax collection at the Kenya Ports Authority. The relationship between the tax intelligence operations and customs tax collection is positive, implying that as the taxman increases its expenditure on tax intelligence operations will result to the growth of customs tax revenue in KPA. Maina (2019), further concurred that tax intelligence operations impact on efficiency of revenue collection at Domestic Taxes Department at Kenya Revenue Authority. The study found search and seizure as the most influencing factor, followed by surveillances influence, and finally reconnaissance. The three variables had a positive and significant impact on efficiency of revenue collection at Domestic Taxes Department at Kenya Revenue Authority.

4.5.3 Data-Intelligent Strategy

The third study objective was to assess the role of data-intelligent strategy in revenue collection by Kenya Revenue Authority in Mombasa County. This objective was determined by posing several statements related to investigate the role of data-intelligent strategy. A Likert scale was used to rate this variable's effects on a scale of 5 point within a range of; 1= strongly disagree which was the lowest scale and 5 = strongly agree which was the highest scale and were analyzed using the mean score. The closer the mean score on each score was to 5, the stronger the agreement was to the statement posed. A score of around 2.5 would indicate uncertainty while scores significantly below 2.5 would suggest disagreement with the suggested statements.

The results in Table 4.8 indicate that the respondents agreed that predictive modelling has helped detect fraud by integrating current data with social network analysis with a mean of 4.10 and standard deviation of 0.604. Predictive modelling enables detection and remedial of filing errors and payment compliance with a mean of 4.19 and standard deviation of 0.682. Predictive analytics helps KRA officials predict unreported income based on sector analysis thus a good source of data intelligence with a mean of 3.93 and standard deviation of 0.765. Predictive analytics provide

unverified learning means to identify new, unknown types of risk and interesting/anomalous patterns in data with a mean of 4.06 and standard deviation of 0.702. Centralized data marketplace enables faster data transfer across departments for faster decision making on intelligence information with a mean of 3.89 and standard deviation of 0.725. Finally, they agreed that Centralized data marketplace enables information sharing easier across departments reducing inter-departmental rivalries in KRA with a mean of 3.96 and standard deviation of 0.851.

Table 4.8: Data-Intelligent Strategy

	Mean	Standard Deviation
Predictive modelling helps detect fraud by integrating current data with social network analysis.	4.10	.604
Predictive modelling enables detection and remedial of filing errors and payment compliance.	4.19	.682
Predictive analytics helps KRA officials predict unreported income based on sector analysis thus a good source of date intelligence.	3.93	.765
Predictive analytics provides unverified learning means to identify new, unknown types of risk and interesting/anomalous patterns in data.	4.06	.702
Centralized data marketplace has enhanced faster data transfer across departments for faster decision making on intelligence information.	3.89	.725
Centralized data marketplace enables information sharing easier across departments reducing inter-departmental rivalries in KRA.	3.96	.851
Average	4.03	.728

Likewise, the aggregate mean score of 4.03 and standard deviation of 0.728 signifies that data-intelligent strategy has a considerable outcome on revenue collection by Kenya Revenue Authority in Mombasa County. The findings were in agreement with Kioko (2019), who stated that the expenditures by the tax authority on data-intelligent strategy had a positive and statistically significant impact on customs tax collection at the Kenya Ports Authority. The relationship between the data-intelligent strategy and custom tax collection is positive, implying that as the taxman increases its expenditure on tax intelligence operations will result to the growth of customs tax

revenue in KPA. The findings by Nishimwe (2019) further stated that predictive analytics, centralized analytics structure and predictive modelling have a positive significant effect on revenue collection by Rwanda Revenue Authority in Rwamagana.

4.5.1 Revenue Collection

The general objective of the study was to establish the role of tax intelligence in revenue collection by Kenya Revenue Authority in Mombasa County. The objective was determined by posing several statements related to tax intelligence collection. A Likert scale was used to rate this variable's effects on a scale of 5 point within a range of; 1= strongly disagree which was the lowest scale and 5 = strongly agree which was the highest scale and were analyzed using the mean score. The closer the mean score on each score was to 5, the stronger the agreement was to the statement posed. A score of around 2.5 would indicate uncertainty while scores significantly below 2.5 would suggest disagreement with the suggested statements.

Table 4.9: Revenue Collection

	Mean	Standard Deviation
Revenue targets have been boosted by introduction of robust tax intelligence by KRA.	4.39	.840
Revenue targets will be improved through conversion of tax estimates into actual collection.	4.46	.796
Additional tax assessment resulting from tax intelligence has led to more tax collection by KRA.	4.21	.818
Additional tax assessment has increased since KRA introduced robust tax intelligence which has led to increased tax collection.	4.32	.805
Tax compliance has been improved since KRA introduced robust tax intelligence which is aimed at detecting tax frauds.	4.13	.767
Tax compliance has improved since taxpayers fear to be investigated for tax evasion which will be costly due to penalties imposed by the taxman.	4.02	.776
Average	4.26	.801

The results in Table 4.8 indicate that the respondents agreed that revenue targets have been boosted by introduction of robust tax intelligence by KRA with a mean of 4.39 and standard deviation of 0.840. Revenue targets will be improved through conversion of tax estimates into actual collection with a mean of 4.46 and standard deviation of 0.796. Additional tax assessment resulting from tax intelligence has led to more tax collection by KRA with a mean of 4.21 and standard deviation of 0.818. Additional tax assessment has increased since KRA introduced robust tax intelligence which has led to increased tax collection with a mean of 4.32 and standard deviation of 0.805. Tax compliance have been improved since KRA introduced robust tax intelligence which is aimed at detecting tax frauds with a mean of 4.13 and standard deviation of 0.767. Finally, they agreed that tax compliance has improved since taxpayers fear to be investigated for tax evasion which will be costly due to penalties imposed by the taxman with a mean of 3.96 and standard deviation of 0.851.

Likewise, the aggregate mean score of 4.26 and standard deviation of 0.801 signifies that tax intelligence has a considerable outcome on revenue collection by Kenya Revenue Authority in Mombasa County. The findings were in agreement with Gitaru (2019), whose findings established that there was a significant increase in the revenue generated after introduction of intelligence gathering system. The study has found out that a combine impact of artificial intelligence system, data-intelligent system and human intelligence system had a joint positive significant impact on revenue generation in Mombasa. The results of Kioko (2019) states that the expenditures by the tax authority on the intelligence collection, data-intelligent strategy and tax intelligence operations had a positive and statistically significant impact on customs tax collection at the Kenya Ports Authority. The relationship between the three variables and customs tax collection is positive, implying that as the taxman increases its expenditure on intelligence collection, data-intelligent strategy and tax intelligence operations will result to the growth of custom tax revenue in KPA.

4.6 Correlation Analysis

Kothari (2014) states that the importance of correlation is to determine the extent to which changes in the value of an attribute is associated with changes in another attribute. Correlation coefficient can range from -1 to +1, with -1 indicating a perfect negative correlation, + 1 indicating a perfect positive correlation, and 0 indicating no correlation at all.

Table 4.10: Pearson Correlation Matrix

		Revenue Collection	Tax. Intelligence Collection	Tax Intelligence Operations	Data Intelligent Strategy
Revenue Collection	Pearson Correlation	1			
	Sig. (2-tailed)				
	N	179			
Tax Intelligence Collection	Pearson Correlation	.637**	1		
	Sig. (2-tailed)	.002			
	N	179	179		
Tax Intelligence Operations	Pearson Correlation	.670**	.521**	1	
	Sig. (2-tailed)	.000	.000		
	N	179	179	179	
Data Intelligent Strategy	Pearson Correlation	.770**	.254**	.214**	1
	Sig. (2-tailed)	.000	.003	.001	
	N	179	179	179	179

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

The Pearson Correlation of intelligence collection and revenue collection was computed and established as 0.637 (p-value=0.002) which is a strong significant and positive relationship between the two variables. The positive relationship shows that the utilization of various intelligence collection techniques has a potential impact in improving revenue collection by Kenya Revenue Authority. Further, the Pearson Correlation of tax intelligence operations and revenue collection was computed and established as 0.670 (p-value=0.000) which is a strong significant and positive relationship between the two variables. The positive relationship shows that the introduction of the various tax intelligence operations has a potential significance in increasing revenue collection by Kenya Revenue Authority. And finally the Pearson Correlation of data-intelligent strategy and revenue collection was computed and established as 0.770 (p-value=0.000) which is a strong significant and positive relationship between the two variables. The positive relationship shows that the introduction of the various data-intelligent strategy has a potential significance in increasing revenue collection by Kenya Revenue Authority

4.7 Regression Analysis

Regression is the determination of a statistical relationship between two or more variables (Bryman & Bell, 2015). When there are two or more independent variables, the analysis about the relationship is known as multiple regression and the equation describing such relationship as the multiple regression equation.

4.7.1 Model Summary

In table 4.11, the value of (R) is 0.749, which denotes existence of variance shared between the dependent and independent variables. Coefficient of determination R^2 equals to 0.561 suggesting that tax intelligence collection, tax intelligence operations and data-intelligent strategy explain 56.1% of factors affecting revenue collection by Kenya Revenue Authority while 43.9% was contributed by other factors not studied in this research.

Table 4.11: Model Summary

Model	R.	R Square	Adjusted R Square	Std. Error of the Estimate
1	.749	.561	.553	1.683

- a. Predictors: (Constant), tax intelligence collection, tax intelligence operations and data-intelligent strategy.
- b. Dependent variable: revenue collection.

4.7.2 Analysis of Variance

ANOVA is a procedure for testing the difference among different groups of data for homogeneity. The essence of ANOVA is that the total amount of variation in a set of data is broken down into two types, that amount which can be attributed to chance and that amount which can be attributed to specified causes. While F- test is also used in the context of analysis of variance (ANOVA) for judging the significance of multiple correlation coefficients (Olaleye, 2016). The results of ANOVA test in Table 4.12 show that the F value is 42.76 with a significance of p value = 0.000 which is less than 0.05, thus we conclude that there is a significant effect of tax intelligence on revenue collection by Kenya Revenue Authority in Mombasa County.

Table 4.12: Analysis of Variance

Model		Sum of Squares	DF	Mean Square	F	Sig.
1	Regression	634.43	3	211.78	74.59	.000
	Residual	497.37	175	2.84		
	Total	1131.81	178			

- a. Predictors: (constant), tax intelligence collection, tax intelligence operations and data-intelligent strategy.
- b. Dependent variable: revenue collection.

4.7.3 Multiple Regression Coefficient

Multiple regression is the procedure of defining the statistical association between two or more variables (Achieng', 2014). It was conducted to determine the relationship between revenue collection and tax intelligence collection, tax intelligence operations and data-intelligent strategy.

Table 4.13: Multiple Regression Coefficient

Model	Unstandardized Coefficients.		Standardized Coefficients.		Sig.
	B	Std. Error	Beta	t	
1					
(Constant)	1.867	.213		8.761	.000
Tax Intelligence Collection	.562	.101	.725	5.562	.003
Tax Intelligence Operations	.321	.080	.438	4.012	.000
Data-Intelligent Strategy	.417	.091	.524	4.582	.001

- a. Predictors: (Constant), tax intelligence collection, tax intelligence operations and data-intelligent strategy.
- b. Dependent Variable: revenue collection.

The established regression equation is:

$$Y = 1.867 + 0.562X_1 + 0.321X_2 + 0.417X_3$$

Intelligence collection had the strongest positive relationship with revenue collection with a beta value of 0.725 and p value of less than 0.05 followed by data-intelligent strategy with a beta value of 0.524 and p value of less than 0.05. Finally, tax intelligence operations with a beta value of 0.438 and p value of less than 0.05. All the three variables significantly predicted revenue collection. The beta coefficients in the regression model show that all the tested variables had a positive relationship and statistically significant with p-values of less than 0.05.

A constant of 1.987, demonstrates that if tax intelligence collection, tax intelligence operations and data-intelligent strategy are at zero, revenue collection would be 1.867. The regression coefficient for tax intelligence collection is 0.562 which means that they are positively correlated with revenue collection. This implies that an increase in intelligence collection by 1%, will result to a 56.2% increase in revenue collection. The regression coefficient for tax intelligence operations is 0.321 meaning that they are positively related with revenue collection. This implies that an increase in tax intelligence operations by 1%, will result to a 32.1% increase in revenue collection. Finally, the regression coefficient for data-intelligent strategy is 0.417 meaning that they are positively related with revenue collection. This implies that increasing data-intelligent strategy by 1%, will result to a 41.7% increase in revenue collection.

These results were supported by the findings of Nishimwe (2019), who concurred that predictive analytics, centralized analytics structure and predictive modelling have a positive significant effect on revenue collection by RRA. Gitaru (2019) further confirmed that a combined impact of artificial intelligence, data-intelligent and human intelligence system had a joint positive significant impact on revenue generation in Mombasa County. While Maina (2019) revealed that reconnaissance, surveillances and search and seizure had a positive and significant impact efficiency of revenue collection at Domestic Taxes Department at KRA. Finally, Kioko (2019) revealed that the expenditures by the tax authority on the intelligence collection, data-intelligent strategy and tax intelligence operations had a positive and statistically significant impact on customs tax collection at the Kenya Ports Authority. The relationship between the three variables and customs tax collection is positive, implying that as the taxman increases its expenditure on intelligence collection, data-intelligent strategy and tax intelligence operations will result to the growth of custom tax revenue in KPA.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATION

5.1 Introduction

This chapter gives the summary of the findings, conclusion and recommendations to policymakers and suggestions for further study.

5.2 Summary

Broadly, the study sought to establish the role of tax intelligence in revenue collection by Kenya Revenue Authority in Mombasa County. Specifically, it sought to establish the role of tax intelligence collection in revenue collection by Kenya Revenue Authority in Mombasa County. To determine the role of tax intelligence operations in revenue collection by Kenya Revenue Authority in Mombasa County. And to assess the role of data-intelligent strategy in revenue collection by Kenya Revenue Authority in Mombasa County. The theoretical and empirical literature on revenue collection and role of tax intelligence were expansively studied, and a comprehensive conceptual framework for the relationship among dependent and independent variables formulated which dictated formulation of questionnaire. The questionnaire tested for reliability using Cronbach's alpha coefficient and validity using Kaiser-Meyer-Olkin Measure and Bartlett's Test. A sample size was selected using Yamane formula and a structured questionnaire used to collect information from the respondents. The data was analyzed using inferential and descriptive statistics while the findings were presented in accordance with the research objectives.

5.2.1 Tax Intelligence Collection

With regards to the first objective, the study established the role of tax intelligence collection in revenue collection by Kenya Revenue Authority in Mombasa County. The results of correlation showed that there was a positive significant linear relationship between tax intelligence collection and revenue collection by Kenya Revenue Authority in Mombasa County. The result of the significance of regression show that tax intelligence collection influences revenue collection by Kenya Revenue Authority in Mombasa County. Therefore, tax intelligence collection has a significant role in revenue collection by Kenya Revenue Authority in Mombasa County.

5.2.2 Tax Intelligence Operations

The study determined the role of tax intelligence operations in revenue collection by Kenya Revenue Authority in Mombasa County. The results of correlation showed that there was a positive significant linear relationship between tax intelligence operations and revenue collection by Kenya Revenue Authority in Mombasa County. The result of the significance of regression show that tax intelligence operations influence revenue collection by Kenya Revenue Authority in Mombasa County. Therefore, tax intelligence operations have a significant role in revenue collection by Kenya Revenue Authority in Mombasa County.

5.5.3 Data-Intelligent Strategy

In relation to the third objective, the study assessed the role of data-intelligent strategy in revenue collection by Kenya Revenue Authority in Mombasa County. The results of correlation showed that there was a positive significant linear relationship between data-intelligent strategy and revenue collection by Kenya Revenue Authority in Mombasa County. The result of the significance of regression show that that data-intelligent strategy influences revenue collection by Kenya Revenue Authority in Mombasa County. Therefore, data-intelligent strategy has a significant role in revenue collection by Kenya Revenue Authority in Mombasa County.

5.3 Conclusion

Based on the findings, it is evident that there is a significant relationship between tax intelligence and revenue collection by Kenya Revenue Authority in Mombasa County. Correlations analysis results indicated a positive relationship between tax intelligence and revenue collection. Regression analysis results further indicate a significant positive relationship. This implies that KRA should capitalize on the efficiencies of their resources to realize high revenue performance. Tax intelligence is relished by KRA through making use of some renowned techniques associated to this task, in the course of investigations conducted by the tax intelligence staff. These techniques are meant to increase the chances of success in the identification of persons who will be subject of investigations by the tax Intelligence, and to get the largest amount of information on such targets. Data included in information brought by informers, as well as economic sectorial studies carried out in order to identify specific taxpayer segments can be used to achieve this goal.

5.4 Recommendations

The study made the following recommendations:

1. The study recommends that KRA management should allocate more financial resources in order to strengthen the organization capacity in tax intelligence collection. The authority should recruit more officers with varied intelligence and investigation expertise.
2. The government should allocate the organization sufficient operation funds in order to expand its tax intelligence operations in the country. The operations should cover all border points and all regions in the country.
3. KRA management should give adequate consideration to tax intelligence reports and take appropriate action on recommendations made.
4. The study further recommends regular training of intelligence officers on modern tax intelligence techniques through local and external seminars and workshops. Intelligence staff must have sufficient proficiency and training to carry out the tasks assigned to them. The tax intelligence's work should be carefully directed, supervised and reviewed. The amount of supervision required should correspond to the experience and skill of the intelligence team at the Authority.
5. The tax intelligence department should develop an Intelligence Management System, preferably in a computerized format and integrated in a network. The system should integrate intelligence collection, analysis through modern analytics tools, dissemination and feedback management. Such system should also include information on received denounces, potential targets, fraud schemes already disclosed in past investigations and informer management. This system should also enhance management of cases and on-going investigations.

5.5 Suggestions for Further Studies

This study established the role of tax intelligence in revenue collection by Kenya Revenue Authority in Mombasa County. The findings demonstrated that tax intelligence positively influenced revenue collection by Kenya Revenue Authority in Mombasa County. The variables were restricted to tax intelligence collection, tax intelligence operations and data-intelligent strategy and only 66.4% of the relationship was described by the variables under the study. The study may be extended in details to other variables. In addition, a repetition of this study should

be conducted using a larger sample size, with inclusion of more variables and application of more robust set of statistical tools apart from those used in this study which could increase the robustness of study models and hence the validity of the results.

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APPENDICES

APPENDIX I: LETTER OF INTRODUCTION



ISO 9001:2015 CERTIFIED

KRA/KESRA/MSA/106

5th October 2020

TO WHOM IT MAY CONCERN

Dear Sir/Madam,

RE: REQUEST TO COLLECT RESEARCH DATA

This is to certify that the following is bona fide student of the Kenya School of Revenue Administration Mombasa Campus undertaking Post Graduate Diploma in Tax Administration.

Name	Admission Number
JULIUS KIPROTICH	HDB336-C016-1757/2018

The above- mentioned student is in her final year of study at the school and currently conducting research on the **ROLE OF TAX INTELLIGENCE IN REVENUE COLLECTION BY KENYA REVENUE AUTHORITY IN MOMBASA COUNTY**. The student is in the process of gathering data and thereafter, compile a report that will strictly be used for academic purposes only. The School would therefore like to seek your permission to allow him collect information that relates to his research from your organization.

Thank you in advance for your support and cooperation.

Yours sincerely,

Mumia B.J.

Associate Head of Research KESRA, Mombasa Campus



Tulipe Ushuru Tujitegeme !



APPENDIX II: QUESTIONNAIRE

This questionnaire seeks to collect data in respect to a study that seeks to establish the role of tax intelligence in revenue collection by Kenya Revenue Authority in Mombasa County. The study is purely for academic purposes only, and any information you provide will be treated with **utmost confidentiality** and will only be published as anonymous statistical data.

Kindly request you to spare a few minutes and fill this questionnaire and thank you for your cooperation.

Section A: Background Characteristics.

1. What is your highest level of education?

- i. Diploma
- ii. Undergraduate Degree
- iii. Masters
- iv. PHD

2. What management level do you belong to?

- i. Top Management
- ii. Middle Management
- iii. Lower Management

3. For how long have you worked with KRA?

- i. Below 3 years
- ii. 4 – 8 years
- iii. 9 – 15 years
- iv. Above 15 years

Section B: Tax Intelligence Collection

This section looks at the role of Tax intelligence collection in revenue collection by Kenya Revenue Authority in Mombasa County. Kindly express the extent to which you agree or disagree with the following statements and indicate the one that describes your position under the scale given below.

Strongly Disagree (1), Disagree (2), Neutral (3), Agree (4), Strongly Agree (5).

No.	Statement	1	2	3	4	5
B1	Signal intelligence is a very convincing form of evidence about tax evasion schemes as it provides almost instantaneous information.					
B2	Signal intelligence is useful since the emitter location can be pinpointed hence easy to track the tax evasion scheme with accuracy.					
B3	Human intelligence has the ability to spot anomalies that are missed by rigid algorithms thus capable of detecting potential tax evasion schemes.					
B4	The authority has an elaborate informer management framework which governs intelligence collection through informers.					
B5	Imagery intelligence is highly credible for of tax intelligence collection as the evidence can be seen by the end user.					
B6	Imagery intelligence is very reliable since the environmental physical features can be studied in details thus provide more evidence about the target.					

Section C: Tax Intelligence

This section looks at the role of tax intelligence operations in revenue collection by Kenya Revenue Authority in Mombasa County. Kindly express the extent to which you agree or disagree with the following statements and indicate the one that describes your position under the scale given below.

Strongly Disagree (1), Disagree (2), Neutral (3), Agree (4), Strongly Agree (5).

No.	Statement	1	2	3	4	5
C1	Reconnaissance helps tax officials gather all the information about taxpayers' operating environment relevant to the phase of investigation.					
C2	Reconnaissance aids tax officials to know the targeted taxpayers' schedules of operation thus help in undercover activities in their premises.					
C3	Tax surveillance aids tax officials to identify the places where clandestine activities are being held.					
C4	Tax surveillance aids tax officials to verify the illicit activities being undertaken by taxpayers.					
C5	Search and seizure aid tax officials to hunt for evidence of illicit practices in various hideout of taxpayers.					
C6	Search and seizure aid tax officials to obtaining denied tax data that assure the precise determination of the tax liability.					

Section D: Data-Intelligent Strategy

This section looks at the role of data-intelligent strategy in revenue collection by Kenya Revenue Authority in Mombasa County. Kindly express the extent to which you agree or disagree with the following statement and indicate the one that describes your position under the scale given below.

Strongly Disagree (1), Disagree (2), Neutral (3), Agree (4), Strongly Agree (5).

No.	Statement	1	2	3	4	5
D1	Predictive modelling helps detect fraud by integrating current data with social network analysis.					
D2	Predictive modelling enables detection and remedial of filing errors and payment compliance.					
D3	Predictive analytics help KRA officials predict unreported income based on sector analysis thus a good source of date intelligence.					
D4	Predictive analytics provide unverified learning means to identify new, unknown types of risk and interesting/anomalous patterns in data.					
D5	Centralized data marketplace enhances faster data transfer across departments for faster decision making on intelligence information.					
D6	Centralized data marketplace enables information sharing easier across departments reducing inter-departmental rivalries in KRA.					

Section E: Revenue Collection

This section looks at the role of tax intelligence in revenue collection by Kenya Revenue Authority in Mombasa County. Kindly express the extent to which you agree or disagree with the following statements and indicate the one that describes your position under the scale given below.

Strongly Disagree (1), Disagree (2), Neutral (3), Agree (4), Strongly Agree (5).

No.	Statement	1	2	3	4	5
E1	Revenue targets have been boosted by introduction of robust tax intelligence by KRA.					
E2	Revenue targets will be improved through conversion of tax estimates into actual collection.					
E3	Additional tax assessment resulting from tax intelligence has led to more tax collection by KRA.					
E4	Additional tax assessment has increased since KRA introduced robust tax intelligence which has led to increased tax collection.					
E5	Tax compliance has improved since KRA introduced robust tax intelligence which is aimed at detecting tax frauds.					
E6	Tax compliance has improved since taxpayers fear to be investigated for tax evasion which will be costly due to penalties imposed by the taxman.					