

**EFFECT OF REVENUE COLLECTION TECHNIQUES ON FINANCIAL  
PERFORMANCE OF COUNTY GOVERNMENTS**

**BY**

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## DECLARATION

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

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

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## **DEDICATION**

This work is dedicated to my family for their unconditional love, support and encouragement they guaranteed throughout the entire period of the study. Special dedication to my husband Onyango Amon who tirelessly and continually guided and encouraged me throughout the study period.

## ABSTRACT

Revenue collection techniques are the various methods which an organization may use to collect sufficient revenue to enable them achieve good governance and efficient service delivery. Financial performance is measuring the results of a firm's policies and operations in monetary terms reflected in the firm's return on investment, return on assets and value added. Kisumu County Government has a potential to collect Kshs.7 Billion annually to support and facilitate service delivery, socio-economic development and growth. However, in the last four years statistics indicated that Kisumu County Government collected 65%, 53%, 63% and 76% revenue respectively which is far much below its projections. The dwindling trend showed inadequacy of revenue collections which would have been attributed to inefficient revenue collection techniques. The current study sought to establish the effect of revenue collection techniques on financial performance of Kisumu County Government. Specifically, the study sought to: Determine the effect of contracting-out revenue collection to agencies on financial performance of Kisumu County Government and assess the effect of electronic revenue collection on financial performance of Kisumu County Government. The study was anchored on revenue diversification and optimal taxation theories. Correlation research design was used. The study targeted 577 personnel under Directorate of Revenue, Department of Finance and Planning Kisumu County Government. Stratified random sampling technique was used to select a sample of 82 personnel out of which the response rate was 67 respondents. Both Primary and Secondary data was used in the study. Primary data was collected using self-designed questionnaire while secondary data was obtained from 2014-2018 audited financial reports of Kisumu County Government using data collection sheet between 2014 and 2018. A pilot study of eight (8) was conducted while the remaining 74 was retained for the main study. The data collected was analyzed by inferential descriptive statistics using the mean and mode respectively. Pearson product moment correlation was used to establish the association between the independent and dependent variables while multiple regression was used to determine the magnitude and direction of effect of revenue collection techniques and financial performance. Findings of the study revealed that revenue collection techniques are significant predictors of financial performance with electronic revenue collection ( $\beta=1.138$ ,  $p=0.000$ ) having higher effect than contracting-out revenue collection ( $\beta= -0.218$ ,  $p=0.011$ ) on financial performance. This implies that a change in contracting-out revenue collection leads to -0.218 decrease in financial performance while a change in electronic revenue collection leads to 1.138 increases in financial performance. Contracting-out revenue ( $p=0.011$ ) and Electronic revenue collections ( $p=0.000$ ) made the relationship with financial performance significant. The study concludes that contracting-out revenue collection had a negative and significant effect and electronic revenue collection had a strong positive and significant effect on financial performance of Kisumu County Government. The study recommends that ICT department to ensure effective coordination of electronic revenue collection process to help the County achieve its revenue potential. It is envisaged that results may be of use to policy makers and stakeholders in designing advanced electronic systems to enhance optimal revenue collections and also serve as a basis for further research to academicians.

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## **LIST OF ABBREVIATIONS AND ACRONYMS**

|             |  |
|-------------|--|
| <b>C.Gs</b> | County governments                             |
| <b>CRS</b>  | Corporate social Responsibility                |
| <b>GRA</b>  | Ghana revenue authority                        |
| <b>IGF</b>  | Internally generated funds                     |
| <b>IS</b>   | Information System                             |
| <b>KRA</b>  | Kenya Revenue authority                        |
| <b>OSRC</b> | Own source Revenue collection                  |
| <b>RDT</b>  | Revenue diversification Theory                 |
| <b>TF</b>   | Transfer fund                                  |
| <b>COK</b>  | Constitution of Kenya                          |
| <b>CIDP</b> | County Integrated Development Plan             |
| <b>TRA</b>  | Tanzania Revenue Authority                     |
| <b>LGs</b>  | Local Governments                              |
| <b>CRA</b>  | Contracting out Revenue Collection to Agencies |
| <b>ERC</b>  | Electronic Revenue Collection                  |

## OPERATIONAL DEFINITION OF TERMS

**Revenue Collection:** The act of government agency`s engagement in collecting outstanding financial duties from the residents.

**Revenue Collection Techniques:** Methods which the county governments employ to help them collect sufficient revenue in order to achieve good governance and effective service delivery.

**Financial Performance:** Is the measuring of results of a firm`s policies and operations in monetary terms reflected in the firm`s return on investment, return on assets and value added.

**Contracting out Revenue Collection:** Is the process in which state enters into agreements with private sector firms, for profit or non-profit to provide goods or manage services.

**Electronic Revenue Collection Technique:** A computerized system meant to collect government fees, taxes and custom duties.

**Political Influence:** Ability of private of individuals and groups to influence, condition, shape and thereby control the authoritative decisions and actions of those who possess the formal legal authority to take these decisions and actions.

**County Governments:** Devolved governments that paved way for decentralization reforms that saw the devolution of functions and resources.

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## **CHAPTER ONE**

### **INTRODUCTION**

This Section highlighted the background of the study, problem statement, and objectives of the study, research hypotheses, scope and justification of the study.

#### **1.1 Background of the Study**

Revenue collection techniques are various methods which an organization may use to collect sufficient revenue to enable them achieve good governance and effective service delivery Kumshe and Bukar, (2013). With the adoption of efficient and effective revenue collection techniques, county government are able to collect optimal revenue to help facilitate investment, socio-economic development and growth at the grassroots and efficient service delivery Osoro, Atambo and Abuga, (2016) which significantly provide a financial prudence sound.

Financial performance is the measuring of the results of a firm's policies and operations in monetary terms reflected in the firm's return on investment, return on assets and value added. It is the county government's ability to finance its services on a continuing basis, ability to meet its obligations as they fall due, ability to finance the services its constituents require when they require those (Kamnikar et al. 2006). Measured by the allocation from national government, the efficiency in collection of local revenue and the expenditure allocation into development and recurrent expenditure (Njahi, 2017). These measures sometimes poses great challenges that affect financial performance in county governments like political influence , interested parties and bureaucracy which are difficult to measure due to their nature of being qualitative and subjective..

The promulgation of the New Constitution of Kenya on 27<sup>th</sup> August, 2010 paved way for realization of Devolved government, which specifically provides for the setting up of the 47 County Governments (Constitution of Kenya, 2010). The constitution empowered counties to collect revenues locally and incur expenses locally on economic development and improve service delivery (Article 186 of Constitution of Kenya).

Kisumu County has a potential to collect revenue of 7 Billion Kenya Shillings per financial year to facilitate its functions (Oruko, 2019). Often, developing countries have a likelihood of insufficient tax techniques which hinder their efforts of tax collection (Osoro et al. 2016) and according to Nyongesa, (2000) many of them are coupled with dwindling revenue generation, remaining overwhelmingly dependent on central government for their financial resources, with limited revenue raising ability.

Kisumu County has been collecting revenue far below its potential. Between 2014 and 2018 it collected 65%, 53%, 63% and 76% respectively of annual projections. Furthermore, from 2014 to 2018 financial years, its own collection was Kshs. 3,834,339,771 only which is 63% of the total projection even though the total revenue collection projection was estimated below the County's ability (Summary of revenue collection per stream 2014-2018). This inadequate revenue collection is attributed to inefficient and ineffective revenue collection techniques.

Many studies have been documented on effect of contracting-out revenue collection to agencies on financial performance. However these studies have posted mixed results. The studies of (Kamanga and Ismail, 2016) applied descriptive with regression and correlation methods and census technique of analysis and found strong positive results on organizational financial performance. Whereas the study of Awortwi (2012) used report card method and desk top review and found negative correlation between contracts documents and agents' performance. (Greve and Coelho, 2017; Benmarker et al. 2013) used difference-in-differences and randomized experiment but their results were unknown.

Literature on the effect of contracting-out revenue collection to agencies shows diversity of results. Previous studies have revealed that consensus has not been reached on the effect of contracting out revenue collection to agencies. This is because some studies revealed strong positive results while other revealed negative results. Those that revealed strong positive results applied descriptive and inferential statistics with correlation and regression analyses while those that revealed negative results used report card method. Additionally, others reported inconclusive results using randomized experiment. Therefore the study sought to determine the effect of contracting-out revenue collection to agencies on financial performance of Kisumu County Government.

Empirical studies on the effect of electronic revenue collection on financial performance proved conflicting results. Studies of (Okiro, 2015; Madegwa et al. 2018); Mornica et al. 2017) used descriptive analysis method and found a positive impact on organization performance. On the contrary (Muturi and Kiarie, 2015) applied descriptive research analysis with correlation and regression analyses and the study revealed a negative effect on performance and recommended for further study to be done.

Majority of the reviewed literature on the effect of electronic revenue collection on financial performance were conducted in a developing country, Kenya except one developed country, USA. They found conflicting results. Some revealed positive results while other studies revealed negative results. Those studies that revealed positive results applied descriptive and inferential statistics method with regression analysis and found positive impact on organization performance though for efficiency purposes, revenue management needs ought to be improved. Contrastingly, studies that revealed negative results applied descriptive research design with correlation and regression analysis. Therefore, of all the above studies, none of them used both none of them used both primary and secondary data.

## **1.2 Statement of the Problem**

Revenue collection technique is a necessary tool that enable any organization to collect adequate revenue to enable it operate, grow and survive. Thus, Kisumu County Government with a potential of Kenya Shillings 7 Billion revenue base, need to collect optimal revenues to enable it finance both the recurrent and capital development expenditure, service delivery, and socio-economic development and growth. However, in the past four years, it has managed to collect a paltry revenue averaging to 63% of total projection which is far below its revenue potential. This inadequate revenue collection could be attributed to ineffective revenue collection techniques. The past studies on revenue collection techniques have ineffectively addressed the problem of poor revenue collection because they have shown mixed and inconclusive results on contracting-out revenue collection to agencies and electronic revenue collection on financial performance. The inability to sufficiently collect revenue to enable finance both recurrent and development expenditure negatively impacted facilitation of service delivery, capital investments, socio-economic development and growth.

The study therefore seeks to establish the effect of revenue collection techniques on financial performance of Kisumu County Government.

### **1.3 Objectives of the Study**

The main aim of this study was to establish the effect of revenue collection techniques on financial performance of Kisumu County Government, Kenya.

Specifically, the study sought to:-

- i. Determine the effect of contracting-out revenue collection to agencies on financial performance of Kisumu County Government, Kenya.
- ii. Assess the effect of electronic revenue collection on financial performance of Kisumu County Government, Kenya.

### **1.4 Research Hypotheses**

- i. **H<sub>01</sub>**: Contracting-out revenue collection to agencies has no significant effect on financial performance of Kisumu County Government, Kenya.
- ii. **H<sub>02</sub>**: Electronic revenue collection has no significant effect on financial performance of Kisumu County Government, Kenya.

### **1.5 Scope of the Study**

The scope of the study was evaluated in terms of subject, area and time. In terms of subject the study was limited to Financial Management of county governments. The study was conducted for two years between January, 2017 to October, 2018. It focused on the staff from the Department of Finance and Planning, Directorate of Revenue of Kisumu County Government, Kenya who were the respondents in the study and it was on the effect of revenue collection techniques on Financial Performance.

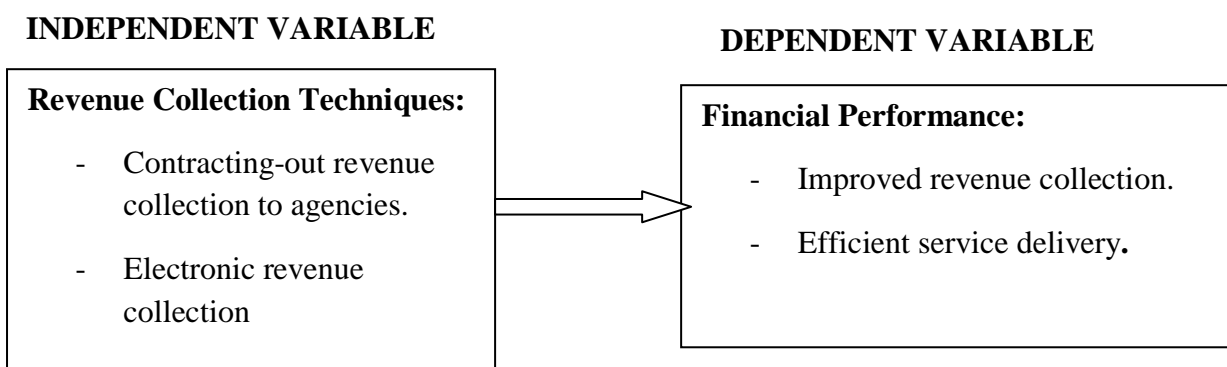
### **1.6 Justification of the Study**

The findings of this research study may be of immense importance to the National Government, County governments, the researchers and other parties interested in revenue related issues. The study findings may help the county policy makers to choose the most efficient and effective revenue collection techniques that could optimize revenue collection to enable the County to achieve its full potential.



To the academicians, the findings may serve as a basis for further research work on the effect of revenue performance and finally serve as a source of reference material to students, governments and private sectors. Additionally it may inform various Governmental Agencies and Cabinets involved in revenue collection on the role of revenue collection techniques towards improvement of revenue collections. The findings may also be of great value to the financial managers and financial consultants who may use the findings to draw county budgets and advise on sufficient use of county resources.

### 1.7 Conceptual Framework



**Figure 1.1: Hypothesized relationship between revenue collection techniques and Financial Performance.**

**Source:** Adapted from Dahlby (2009)

Figure 1.1 shows that revenue collection techniques is the independent variable and financial performance is the dependent variable. Revenue collection techniques are measured by contracting-out revenue collection to agencies and electronic revenue collection. Financial performance is measured by improved revenue collection and efficient service delivery. The conceptual framework was adapted and modified from Dahlby (2009).

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Theoretical Review**

This Section reviewed the Theoretical conceptual framework on the effectiveness of revenue collection techniques which the study was grounded. It reviewed empirical literature on the past studies in this area and gave a critical evaluation of the literature.

##### **2.1.1 Revenue Diversification Theory**

The study adopted a revenue diversification strategy that stems from the financial modern portfolio Theory, were applied as the second potential revenue strategy for county governments. Bernelot (2013) Revenue Diversification Theory focuses on whether a more diversified well-balanced revenue portfolio increases financial stability for county by reducing revenue volatility. There is a positive effect of the strategies adopted in raising revenues finances , commercial and market oriented revenue strategies have been found to have a positive effect on revenue collection performance. He suggests that revenue is derived from various sources and there must be an equal balance between multiple incomes sources in the revenue portfolio of non-profit organizations usually lead to increase financial stability.

The present study find this Theory beneficial in that diversification level positively influences financial performance of county governments, moreover it is significant as it indicates that it is important for county governments to have adequate revenue to implement their functions as stipulated in Schedule 4 of the Constitution of Kenya 2010.

##### **2.1.2 Optimal Taxation Theory**

This theory aims to minimize the cost of raising tax revenue. (Dahlby and Wilson 1994; Smart 1998; Dahlby 2009) states that the most relevant policy rule developed under this tradition states that revenues are collected optimally when the marginal cost of raising public funds is equalized across tax instruments and all government units.

According to this theory sub-national governments should rely more on those revenue sources that are more productive under the optimal way of tax instruments applied through

business licensing. Land rates, rents and other services. Challenges in revenue collection rotate around the revenue collection systems as indicated (Okiro, 2015).

Osoro, Atambo and Abuga (2016) Revenue collection is very important for every government in the world as it enables the government to acquire assets which are not liable to debt and which the government uses to develop its economy, more importantly high revenue collection performance is vital to promote efficiency in service delivery and economic development at the counties. This Theory is significant as it talks about optimal revenue collection for economic development, growth and improved service delivery.

### **2.1.3 Contracting-Out Revenue Collection to Agencies**

The Council of State Governments describes contracting-out technique as a process in which the state enters into agreements with private sector firms, for profit or non-profit, to provide goods or manage services. Simply put, contracting-out occurs when governments hire private firms to do job that that governments have done traditionally.

Local governments utilize contracting-out to provide a wide array of services including Bus service, ground maintenance, fire protection, health services, legal services and many more. Advocates of such alternative service delivery arrangements promote comparative contracting with promises of efficiency, cost savings and improved effectiveness (Ferris and Graddy, (1991); and Stein (1990). A county government may engage KRA or any other designated persons as the revenue collecting agent.

There are many reasons for contracting out public goods and services. The most cited are cost savings improved quality of service, insufficient expertise and many others. It is the win-win possibility of better services at lower costs that makes contracting out so attracting. Other reasons include : access to specialized services government cannot provide, avoiding large startup capital out lay, avoiding constant cost of technology upgrades, benefiting from economies of scale and stimulating the growth and diversification of a state`s small business sector.

One of the approaches to measure the success of contracting out is simply to ask agency heads how much they saved after adopting the practice. Looking only at the city

governments, The county Management Association found that City administrators reported cost reductions of 15% - 20%. Determining how much a state can save from contracting out is a function of three variables: the size of the State budget, the percentage of the budget that is contracted out and how much is saved by contracting out.

#### **2.1.4 Electronic Revenue Collection (ERC)**

Agbeyebe et al (2004) Electronic Revenue Collection is a comprehensive solution for the electronic collection of government fees, taxes and custom duties and where Wahab (2012) customers can pay their bills without having to actually move to the firm`s premises. They may also have access to their account information and even transfer money to other accounts in the comfort of their homes. Gekonge and Atambo, 2016 also define electronic revenue collection system as an electronic or computerized system meant to administer taxes with activities ranging from registration, assessment, processing refund of tax claim. The electronic tax administration is essential since it reduces cost. In addition, Mornica et al. (2017) also describes electronic tax system as an online platform whereby the tax payer is able to access through internet all the services offered by a financial authority such as the registration for personal identification number, filing of returns and application compliance certificate. This method of ERC serves as a means to achieve a cashless environment via the introduction of virtual funds and automates all revenue collection processes allowing government agencies to exploit the full capabilities of the technology to transform its services in the public.

According to Okiro (2015), E-payment is a payer`s transfer of a monetary claim on a party acceptable to the beneficiary, a financial exchange that takes place online between the buyer and the seller. The process of cashless plays a big role in ensuring that the county governments collect enough revenue to fund its projects. E-payment has been designed to help individual`s customers and companies as well as bank itself in eliminating or reducing some of the problems inherent in the settlement and payment process. According to Oparanya (2019), the counties should adapt digital system in revenue collection so as to seal loopholes contributing to revenue loss.

### **2.1.5 Revenue Collection Techniques**

Revenue collection techniques are the various methods which an organization may use to collect sufficient revenue to enable them achieve governor and effective service delivery Kumshe and Bukar, (2013). County governments can apply effective revenue collection methods for example making assessment of tax payers and ascertaining the number of tax payer for that year (Ghura, 1998). This helps in determining amount of tax to be collected from tax payer annually in order to plan and a budget for development a gender (Osoro, et al., 2016). According to the Lymer and Oats (2010) a reminder notice is send to tax payers in a period of 2 to 3 weeks before taxes are due for collection in order to ensure that there are no tax arrears this helps the tax payers to filed returns on time and mitigate irregularities and inconsistencies on revenue collected and thus creating harmony between citizens and county government.

The Constitution of the Republic of Kenya 2010 lays the basis of Devolution on Funds in Kenya to the 47 county Governments. This constitution empowered counties to collect revenue locally and incur expenses locally on economic development and improved service delivery, without relying on the National Government. County governments collect revenue by way of tax instruments applied through business licensing, land rates, rent and other services. The challenges of revenue collections rotate around the revenue collection systems Okiro, (2015).

### **2.1.6 County Governments.**

The creation of County Governments in countries of the World is borne out of decentralization in order to ensure development at the grassroots levels. County governments are better positioned to identify pressing needs of communities and ways of meeting such needs. Also mobilization and participation of citizen in Government is enhanced by the County Government. Usang and Salim (2016).

Kenya began the fiscal decentralization journey at independence through the creation of regionalism commonly known as Majimboism. Since Independence Kenya has experimented on various forms of decentralization such as Special Rural Development Program of 1966 among others. In 2010 a Constitution was promulgated which paved way for decentralization reforms that saw the devolution of functions, resources and creation of 47 countries

established after the scheduled general elections in March, 2013 and whose arrangement authority and mandate are the same as preserved in the constitution. The names of the countries are set out in the first schedule of the Constitution, where each county will have a Government consisting of County Assembly and County Executive headed by the Governor.

The County executives have two key responsibilities; they must mobilize the county's own source of revenues, developing the capacity to utilize effectively all the revenues they get (from transfers from the exchequer and own sources) to provide services efficiently to the people. Their functions and powers are articulated under Article 185(2), 186(1) and 187(2) of Part 2 (Fourth schedule) of the Constitution of Kenya 2010, and also designates and other function not assigned to the counties by the Constitution or any other written law and as a National Government functions.

### **2.1.7 Financial Performance of County Governments**

Kathungu, (2016) County Government financial performance is the reflective monetary output of the expenditure incurrence or commitment in various sectorial considerations set by the area county governments subject to the National Government policies and other relational content inclusion in the respective national targets or vision items. The increased or reduced county progress can be observed from different perspectives of measurable items equated into ratios for comprehensive comprehension.

The county government (C.G) financial performance can be measured with visible indicators such as the human capital development, the foreign direct investments, infrastructural increments, the audit queries from the auditor General and level of monitoring and evaluation reports with the comparison of cost benefit Analysis of implemented projects Kathungu, (2016). Increase in recurrent expenditure may signify a C.G. with more commitments to meet than positively attained targets that may need less cost incurrence. Improved infrastructural development in county with immediate or expected relative significance may provide a financial prudence sound. However the increase in more business expansions and license applications may prove a suitable and fair climate for enterprise management and investor welcoming county areas, it is an attribute of financial increase Vis-a Vis performance.

## **2.2 Empirical Literature**

This section reviewed past studies as per the study objectives

### **2.2.1 Effect of Contracting-out Revenue Collection to Agencies on Financial Performance**

Awortwi (2012) conducted a study on contracting out Local Government services to private agents in Ghana. He investigated the relationship between contract design and quality of services delivery. A total of 780 households from 43 residential communities in three Ghanaian Cities of Accra, Kumasi and Tema were asked to assess the quality of SWC services they receive from LG agents in their communities. Households were interviewed in their houses using a report card method. The study found a surprising negative correlation between contract documents and agent's performance. The paper concludes that effectiveness of contracting out documents depends on contract management capacity of government administrators.

Kamanga and Ismail (2016) studied the effect of outsourcing on organizational performance in manufacturing sector in Kenyan firms. They used census survey method to select a population of 42 management staff from 3 major departments. They used primary method through questionnaire to collect data. By the use of descriptive statistics and inferential analysis with correlation and regression analysis and by use of SPSS, the results showed that cost, quality, technology adaption and organization performance had a significant strong positive relationship. Based on the findings, the researcher recommended that organizations should not outsource an activity fully until they have confirmed beyond doubt that the service provider is capable of handling the activity, the organization should engage the service provider on the quality standards which are expected before entering onto the contract, organization should select service provider on the basis of consistent technical and managerial capabilities.

Kahindi (2010) in Kenya established the effect of outsourcing of various activities on the performance of commercial banks in Nairobi, Kenya. He used an exploratory research design with a target population of all 43 licensed commercial banks. Questionnaire which was earlier checked for reliability and validity was used to collect primary data and the secondary data was collected from company financial statements. With descriptive and regression analyses,

he found out that most the important reasons for outsourcing was concentration on core activities, improvement of company focus, efficiency improvement and to increase productivity. From the Pearson Correlation Coefficient there was a high correlation between outsourcing and financial performance. The study concluded that there were many non-core services that banks are outsourcing especially the IT related services. The study therefore recommended agent measures in place in form of outsourcing guideline to the banking sector.

Greve and Coelho (2017) evaluated the impact of contracting out basic health care services in Brazil. The study explored the impact of introducing these contracts in the primary health care sector. They used data on 645 municipalities in the state of Sao Paulo and difference-in-differences methods to estimate the effect of contracting out in the primary health care sector on various dimensions of mortality and health care use. The study findings showed that implementation of the contracting out strategy significantly increases the number of primary health care appointments by approximately one appointment per user of the national health care system per year. Further, the findings also showed that point estimates indicated a reducing effect on hospitalization for preventable diseases.

Benmarker et al.(2013) studied effects of contracting out employment services to empirically assess the effectiveness of contracting out employment services to private placement agencies. With the use of randomized experiment, 33 sub-experiments were generated to be used in the analysis. The study results showed that unemployed at private placement agencies have a closer interaction with case worker than unemployed at the Public Employment Service (PES) in that they receive more assistance in improving the job search technology. They did not find any overall difference in the chances of finding employment between private placement agencies and PES but instead this hid important heterogeneities across different types of unemployed. In particular private providers are better at providing employment services to immigrants, whereas they may be worse for adolescents.

From the above studies, it is evident that the results of empirical literature on the effect of contracting-out revenue collection to agencies are contradictory. (Greve and Coelho, 2017; Kamanga and Ismail, 2016; Benmarker et al. 2013; Awortwi, 2012; Kahindi, 2010). The studies of (Greve and Coelho, 2017; Benmarker et al. 2013; Kamanga and Ismail, 2016) found strong positive results on organizational financial performance using descriptive with



regression and correlation methods, census technique of analysis and randomized experiment technique. On the contrary, the study of Awortwi (2012) used report card method and desk top review and found a negative correlation between contracts documents and agents' performance. All the studies used different sample sizes (Awortwi, 2012; Kahindi, 2010; Greve and Coelho, 2017; Kamanga and Ismail, 2016) at 780, 571, 645, and 42 respectively with the exception of the study of Benmarkr et al. (2013) which did not indicate the sample size applied. Kahindi (2010) used both primary and secondary data to arrive at the results. Whilst (Kamanga and Ismail, 2016; Awortwi, 2012) applied primary data and the rest (Greve and Ceolho, 2017; Benmarker et al. 2013) did not show the type of data they used.

The reviewed studies approach the effectiveness of contracting-out revenue collection to agencies differently. The studies used different methods and techniques of analysis to arrive at mixed results. Some of the studies found strong positive effect on the performance of organizations; others found negative effect while the rest their results were unknown. The current study applied correlation research design to addresses the effect of contracting-out revenue collection to agencies on financial performance.

### **2.2.2 Effect of Electronic Revenue Collection on Financial Performance**

Monica et al. (2017), in Kenya studied effect of electronic tax system on tax collection efficiency in Domestic Taxes Department of Kenya Revenue Authority (KRA), Rift Valley Region. They adopted a case study research design to establish the effects of electronic tax payment on revenue collection efficiency. Data collection tools were questionnaires that were administered to 130 respondents who included employees of KRA and taxpayers. With descriptive and inferential statistics data analysis techniques, the findings revealed that most taxpayers strongly agree that they were able to fully access and operate itax system. The study also recommended that the organization to keep on offering refresher courses on e-filing and other departments to embrace electronic tax filing system,

Booze et al, (2011), investigated automation of revenue collection in Washington DC. A sample of 63 out of 65 factories managed to participate in the study. They collected primary data from production managers inquiring into impact of online receipting process on customer satisfaction. The study findings indicated that adoption of technology on online receipting process showed a positive impact on organization performance in developed

countries. Compared to the traditional receipting process, an online receipting is a value added service that allows online communication between the sender and the recipients. The study recommended that the validity of the origin and the receipt exchange must not be denied and both the sender and intended mechanisms for adopting a new technology the recipient receive a confirmation in case the receipt is delivered successfully or if the receipt fails.

Madegwa et al. (2018), in Kenya assessed the impact of automation of revenue collection process on organizational performance of Trans Nzoia County. Descriptive research design was used. Stratified proportionate random sampling technique was used on a sample population composed of 7 top level managers, 15 accountants and 40 revenue collectors. Semi-structured self-administered questionnaire were used to collect data from the respondents. They analyzed quantitative data by descriptive analysis using SPSS and presented in the form of frequency tables. Content analysis was used for the qualitative data then presented in prose. They also used Regression analysis to establish the relationship between variables. The study concluded that online process influences performance in Trans Nzoia County Government office to a great extent. From the findings the study recommends that automation of revenue management process should be improved to enhance efficiency in the revenue collection process.

Muturi and Kiarie (2015), studied the effect of online tax system on tax compliance among small taxpayers in Meru County Kenya. The study adopted descriptive research design to choose all the 60 sample taxpayers from Meru County tax District. They collected data using questionnaires then subjected to quantitative methods of data analysis using SPSS (version 20). With descriptive statistics both Correlation and Regression analyses, they found out that online tax system does not affect tax compliance level among small tax payers in Meru County. The study also recommended that a further study should be done to establish other factors that affect tax compliance among small taxpayers.

Okiro (2015) studied effect of E-Payment system on revenue collection by Nairobi County Government of Kenya. The study used a descriptive research design in soliciting information in the area of research. 18 Nairobi government departments were used as the target population. He collected data from secondary sources and analyzed them using both

descriptive and inferential statistics and found out that revenue collection performance in Nairobi County increased considerably after introduction of e-payment system in revenue collection. The study concludes that the adoption of e-payment system positively influences the revenue collection performance in Nairobi County. It was recommended that the Government of Nairobi County should ensure that all its wards, dependents and other related units are compelled by regulations to adopt e-payment and ensure management of revenue collection system to lead to the assurance of total compliance to the budgets and that there should be awareness campaigns to ensure that the consumers get the right information as pertains to e-payment revenue collection.

From the above literature on the effect of electronic revenue collection on financial performance proved conflicting results. Studies of (Okiro, 2015; Madegwa et al. 2018; Mornica et al. 2017) used descriptive analysis method and found a positive impact on organization performance. And on the contrary (Muturi and Kiarie, 2015) applied descriptive research analysis with correlation and regression analyses and the study revealed a negative effect on performance and recommended for further study to be done. (Booze et al. 2011) did not indicate the technique nor method they used to arrive at their findings. The studies of (Mornica et al.( 2017); Booze et al. (2011); Madegwa et al. 2018; Muturi and Kiarie, 2015) used primary data to their studies while Okiro, 2015 used secondary data. Studies reviewed used different sampling techniques to select sample sizes (Mornica et al. 2017; Madegwa et al. 2018; Muturi and Kiarie, 2015) used case study, stratified proportionate random sampling and census respectively, but (Booze et al. 2011; okiro, 2015) never indicated their techniques.

Previous surveys above on electronic revenue collection have shown conflicting results. Positive and negative results were proved present with recommendations that. Those studies that revealed positive results applied descriptive and inferential statistics method with regression analysis to find a positive impact on organization performance. Contrastingly, studies that revealed negative results applied descriptive research design with correlation and regression analysis and they recommended for further research study. Many of the studies used different sampling techniques to select sample sizes. The study attempted to conduct another study to assess the effect of electronic revenue collection on financial performance of Kisumu County Government.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

This Section presents description of research methodology that was used in the study. The methodology used in research study included research design, data collection and analysis procedures.

#### **3.2 Research Design**

Research design refers to how data collection and analysis are structured in order to meet the research objectives through empirical evidence economically (Chandran, 2004). The study adopted correlational research design which is used to relate two or more variables and allow predictions of outcomes based on causative relationships between the variables (El-Sayed Ebaid, 2009). According to Sekaran (2000), a correlation research design is applicable in studies where important quantitative variables associated with the problems are delineated.

#### **3.3 Study Area**

The study was carried out within the concepts of revenue collection techniques and financial performance of County Governments in Kenya, and was guided by the stated objectives. Specifically, it focused on Kisumu County Government which is one of the 47 counties in the Republic of Kenya. The choice of Kisumu County as the site of the study is due to its variability and heterogeneity. This is informed by the fact that it has more revenue base and different kinds of socio-economic activities and given that it borders two regional countries and the lake shoreline. The borders of Kisumu County Government follow those of the original Kisumu District, one of the former administrative Districts of the former Nyanza Province in Western Kenya. The current Headquarters of Kisumu County is the city of Kisumu. It has a population of 968,909 (according to the 2009 National Census). The Land of Kisumu County totals 2085 km<sup>2</sup>. The latitude and longitude of Kisumu City is -1089 and 34.7537 respectively. The county consist of seven sub-counties; Kisumu west, Kisumu Central, Kisumu East, Seme, Muhoroni, Nyando, and Nyakach respectively. County's neighbors' are Siaya county to west, Vihiga county to the North, Nandi county to the North East. And its neighbors to the South are Nyamira County and Homa Bay is to the South West. The county has a shore line on Lake Victoria, occupying Northern, Western and a part

of the Southern shores of the Winam Gulf. Tanzania and Uganda borders Kisumu County to the south and south west respectively.

### 3.4 Target Population

Target population refers to the entire group of individuals or objects to which a researcher is interested in generalizing the results of the study and having observable same characteristics Mugenda and Mugenda (2003). The target population of this study comprised of 577 employees working under the Directorate of Revenue, Department of Finance and Planning, Kisumu County. (Organogram for Directorate of Revenue, 2019).

**Table 3.1. Target Population Distribution.**

**Directorate of Revenue, Department of Finance and Planning, Kisumu County Government.**

| <b>S/NO.</b> | <b>DESIGNATION/STAFF CADRE</b> | <b>TARGET POPULATION</b> |
|--------------|--------------------------------|--------------------------|
| 1            | Director of Revenue            | 1                        |
| 2            | Dep. Director of Revenue       | 1                        |
| 3            | Ass. Director of Revenue       | 1                        |
| 4            | Revenue accountant             | 1                        |
| 5            | Revenue Officers               | 5                        |
| 6            | Revenue Supervisors            | 107                      |
| 7            | Revenue Clerks                 | 461                      |
| <b>TOTAL</b> |                                | <b>577</b>               |

Source: Organogram for Directorate of Revenue Kisumu County, 2019

### 3.5 Sample Size and Sample Techniques

According to Orodho and Kombo (2002) samples are always subsets or small parts of the total number that could be studied. The study used stratified random sampling technique by use of Sample Size Calculator at a confidence level of 95% and a margin of error of 10 and selected a sample from the target population. Hayes (2019) stratified random sampling is a method of sampling that involves the division of a population into smaller sub-groups known as strata. For this study a sample of 82 respondents out of 577 staff from the Directorate of Revenue, Department of Finance and Planning was used and determination of sample size per

strata was also done, 8 respondents participated in the pilot study resulting to a normal sample of 74 used in the final study.

**Table 3.2. Distribution of Target Population and Sample Size  
Directorate of Revenue, Department of Finance Planning Kisumu County Government.**

| <b>S/NO</b>      | <b>DESIGNATION/ STAFF<br/>CADRE</b> | <b>TARGET<br/>POPULATION</b> | <b>SAMPLE<br/>SIZE</b> |
|------------------|-------------------------------------|------------------------------|------------------------|
| 1                | Director of Revenue                 | 1                            | 0                      |
| 2                | Deputy Director of Revenue          | 1                            | 0                      |
| 3                | Assistant Director of Revenue       | 1                            | 0                      |
| 4                | Revenue Accountant                  | 1                            | 0                      |
| 5                | Revenue Officers                    | 5                            | 1                      |
| 6                | Revenue Supervisors                 | 107                          | 15                     |
| 7                | Revenue Clerks                      | 461                          | 66                     |
| <b>T O T A L</b> |                                     | <b>577</b>                   | <b>82</b>              |

Source: Organogram for Directorate of Revenue Kisumu County, 2019

### **3.6 Data Collection Methods**

#### **3.6.1 Sources of Data**

The study used both Primary and Secondary data. Sources will be staff from the Directorate of Revenue and Audited reports from the Auditor General using data collection sheets.

#### **3.6.2 Data Collection Procedures**

Data on the effect of revenue collection techniques on financial performance of County governments was collected from the Director of Revenue, Department of Finance and Planning, Kisumu County Government. In line with theories and reported previous studies, the variables of the study were standardized using Financial Ratio Analysis.

#### **3.6.3 Data Collection Instruments**

Data collection is gathering empirical evidence in order to gain new insights about a situation and answer questions that prompt undertaking of the research (Kodhari, 2004). A structural questionnaire containing both open-ended and closed-ended questions were used to collect primary data. Questionnaires were administered to a sample of 74 respondents excluding 8

participants who participated in pilot testing, Kisumu County Government. Audited reports for 2014-2018 using data collection sheets were used to collect secondary data. The audited reports are unqualified financial statements of revenue collection (Appendix II and III).

### 3.6.4 Reliability of the Research Instrument

Reliability refers to the extent to which an experiment, test or any measuring procedure yields the same results on repeated trials (Mugenda and Mugenda, 2003). In the course of the period test-retest of the questionnaire were done on 8 respondents randomly selected from staff from Directorate of Revenue, Department of Finance and Planning, Kisumu County. This was done to make any necessary modification before the actual data collection, after which an alpha co-efficient reliability test was conducted and reliability value calculated for each of the objectives. The internal consistency of the questions was determined via Cronbach’s co-efficient alpha (Cronbach, 1951).

**Table 3.3: Rule of Thumb (Cronbach’s Alpha)**

| <b>Cronbach’s Alpha</b> | <b>Internal Consistency</b> |
|-------------------------|-----------------------------|
| $\alpha \geq 0.9$       | Excellent                   |
| $0.9 > \alpha \geq 0.8$ | Good                        |
| $0.8 > \alpha \geq 0.7$ | Acceptable                  |
| $0.7 > \alpha \geq 0.6$ | Questionable                |
| $0.6 > \alpha \geq 0.5$ | Poor                        |
| $0.5 > \alpha$          | Unacceptable                |

**Source: Cronbach, 1951**

According to Khalid, Abdullah and Kumar (2012), alpha values for each variable under study ought not to be less than 0.70 for statements in the instruments to be deemed reliable. Under this study, the threshold was set at 0.70 and above. Cronbach’s alpha was run to test for the reliability of the research instrument using Likert Scaled variables. The research instrument was found reliable as Cronbach’s alpha co-efficient was 0.775.

**Table 3.4: Reliability Test**

| <b>Reliability Statistics</b> |   |              |
|-------------------------------|---|--------------|
| Cronbach's Alpha              | Cronbach's Alpha<br>Based on Standardized Items | No. of Items |
| .0775                         | .0744   | 21           |

From the table 3.4 above, the Cronbach's alpha was greater than the Rule of Thumb of 0.70, showing that the instrument was acceptable.

### **3.6.5 Validity of the Research Instrument**

The validity of the data collection instruments were done by a finance expert in the Department of Finance and Accounting of Maseno University who is the researcher's supervisor who thoroughly scrutinized the questionnaire and made amendments in accordance with the objectives of the research study. And in addition, validity was enhanced by conducting a pilot study which was aimed at refining the instruments.

### **3.7 Data Analysis and Presentation**

The study used quantitative analysis technique which involves inferential descriptive statistics supported by Statistical Package for the Social science (SPSS) to analyze the quantitative data. Multiple regression and Pearson product moment correlation analysis was used to establish whether independent variables predict a given dependent variable that is whether revenue collection techniques predicts financial performance.

#### **The regression Model: -**

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \varepsilon$$

Where;

Y = Value of dependent variable (Financial Performance)

$\alpha$  = Constant

$\beta_1, \beta_2$  = Regression Co-efficient

$X_1$  = Effect of Contracting-out revenue collection to agencies

$X_2$  = Effect of Electronic Revenue Collection

$\varepsilon$  = Error term



## CHAPTER FOUR

### DATA ANALYSIS, RESULTS AND DISCUSSION

#### 4.1 Introduction

This chapter presents the research findings to the effect of revenue collection techniques on financial performance of Kisumu County Government, Kenya.

The first section shows various descriptive statistics of demographic characteristic and work related factors. The second section presents the results from inferential analysis to determine the relationship between dependent variable and independent variables. This Chapter therefore provides descriptions of the results and the subsequent discussions.

The study had a target sample size of 74 respondents drawn from the strata of respondents from which 67 responses were obtained; this presents 90.5% response rate. The research observes that this is excellent in drawing conclusions from the study as it is deemed to be representative of the population. This response rate is supported by Mugenda & Mugenda (2003), who indicates that a response rate of 70% and above is an excellent representation of the population.

#### 4.2 Socio Demographic Features

The demographic information of the study group in regards to age, gender, level of education and job description in the county government was as follows.

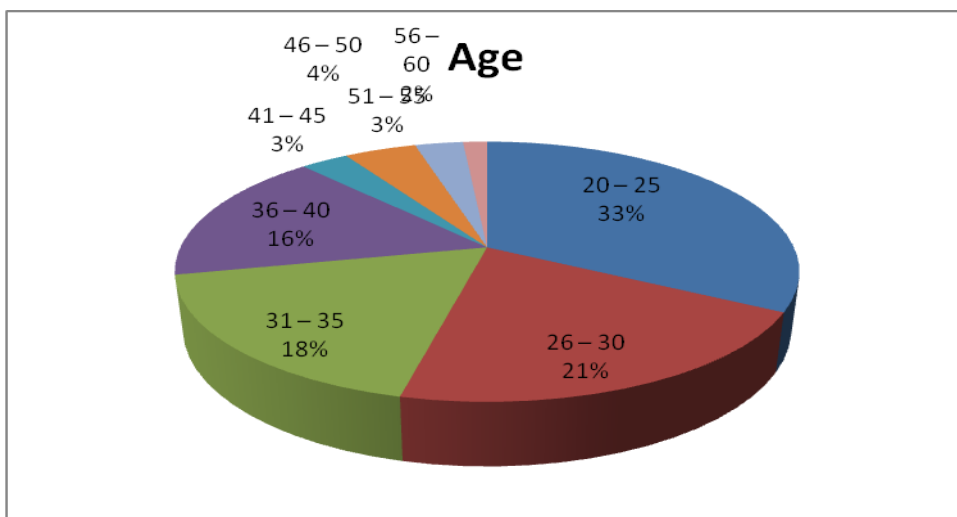
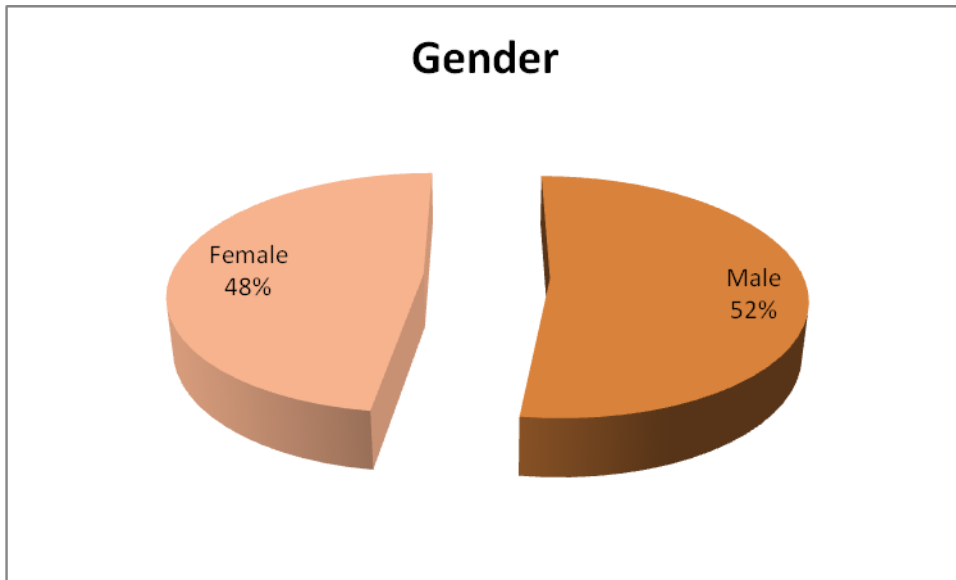


Figure 4.1 Age

#### 4.2.1 Age

The study revealed that majority of the respondents were between the ages of 20-25 years of age at 33% followed those between the ages of 26-30 at 21%. Those respondents who were between the ages of 31-35 were at 18% followed by those between the ages of 36-40 at 16%. Those between 56-60 years of age comprised the minority of the respondents at 2%. Worth noting is the inverse relationship between age and percentage of respondents.



**Figure 4.2: Gender**

#### 4.2.2 Gender

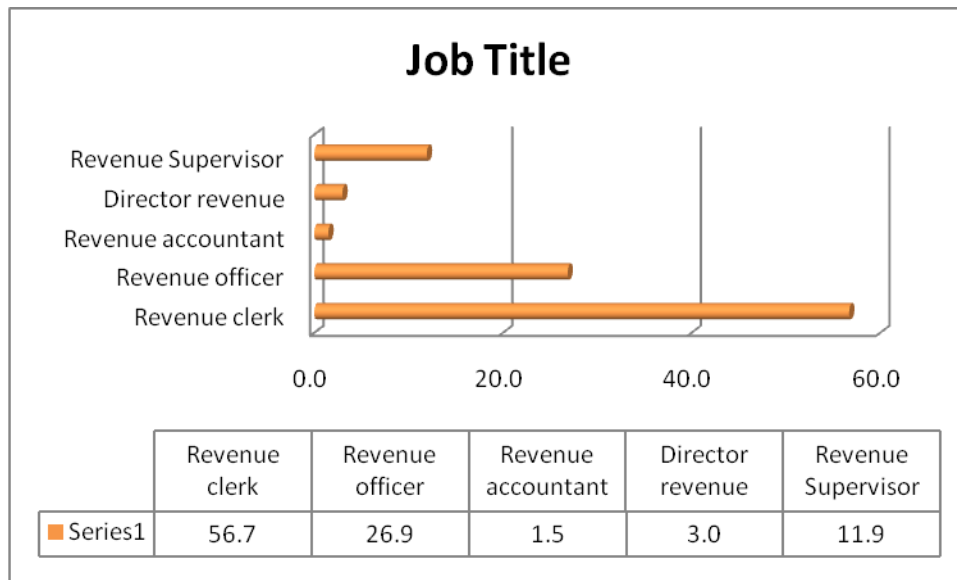
The figure above represents the gender of the respondents. It was revealed that majority of the respondents were males at 52%. Females comprised the minority of the respondents at 48%.

**Table 4.1: Level of Education**

|                      | Frequency | Percent      |
|----------------------|-----------|--------------|
| Primary              | 1         | 1.5          |
| Form IV              | 4         | 6.0          |
| Certificate          | 8         | 11.9         |
| Diploma              | 24        | 35.8         |
| Undergraduate Degree | 27        | 40.3         |
| Master's Degree      | 3         | 4.5          |
| <b>Total</b>         | <b>67</b> | <b>100.0</b> |

**Source: Field Data**

It can be seen from the table above that majority of the respondents had undergraduate degree with a frequency of 27 followed by those who had diploma with a frequency of 24. Those with certificate had a frequency of 8. Those with primary level of education comprised the minority with a frequency of 1.



**Figure 4.3: Job Description**

The study revealed that revenue clerks comprised the majority at 56.7% followed by revenue officers at 26.9%. Revenue supervisors were at 11.9% followed by revenue director at 3%. The minority were the revenue accountants at 1.5%.

### **4.3 Descriptive Statistics for the Effect of Contracting-out Revenue and Electronic Revenue Collections on Financial Performance.**

This section sought to establish the effect of revenue collection techniques on financial performance of Kisumu County Government, Kenya. The respondents were asked to identify effective revenue collection techniques used by Kisumu County Government from a list revenue collection methods. The methods included Manual, Electronic, Contracting-out revenue collection to agencies, Tax payers assessment Single integrated revenue collection, designating revenue collection points for convenience, voluntary compliant and many others.

**Table 4.2: Descriptive Statistics for Key Variables**

| Statistics             |       | Contracting-out<br>Revenue Collection | Electronic<br>Revenue Collection | Revenue Performance |
|------------------------|-------|---------------------------------------|----------------------------------|---------------------|
| N                      | Valid | 67                                    | 67                               | 67                  |
| Mean                   |       | 3.4431                                | 3.4758                           | 3.9900              |
| Std. Deviation         |       | .52776                                | .56295                           | .55647              |
| Skewness               |       | .150                                  | .481                             | .310                |
| Std. Error of Skewness |       | .293                                  | .293                             | .293                |

Source: Computed from field data, 2019

As can be seen from the table 4.2 above, the mean of contracting-out revenue collection to agencies was 3.4431 with a standard deviation of 0.52776 positively skewed at 0.150. and electronic revenue collection had a mean of 3.4758 with a standard deviation of 0.56295 also positively skewed at 0.481. Out of the two independent variables (Contracting-out revenue collection n to agencies and electronic revenue collection), the later had the highest mean followed by the earlier variable with standard deviations of 0.56295 and 0.52776 respectively. The mean therefore is a representative of data.

#### **4.3.1 Effect of Contracting-out Revenue Collection and Electronic Revenue Collection on Financial Performance of Kisumu County Government, Kenya.**

This section sought to determine the effect of independent variables of revenue collection techniques on financial performance of Kisumu County government.

**Table 4.3: Effect of Independent Variables on Dependent Variable**

| Correlations |                     | Contracting<br>out Revenue<br>Collection | Electronic<br>Revenue<br>Collection |
|--------------|---------------------|--|-------------------------------------|
| Performance  | Pearson Correlation | .844**                                   | .963**                              |
|              | Sig. (2-tailed)     | .000                                     | .000                                |
|              | N                   | 67                                       | 67                                  |

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

Source: Computed from field data, 2019

The Correlation analysis Table 4.3 shows Contracting-out revenue collection to agencies

and electronic revenue collection as the independent variables of revenue collection techniques.

Pearson correlation was employed to analyze the level of effect of independent variables (Contracting-out revenue collection to agencies and electronic revenue collection) on Dependent variable (financial Performance) selected for this study. The results show that contracting-out revenue collection ( $r=0.844$ ,  $p=0.000$ ) and electronic revenue collection ( $r=0.963$ ,  $p=0.000$ ) which shows that both have significant positive association with financial performance. Hence suggested possibility of positive relationship between revenue collection techniques and financial performance in Kisumu County Government, Kenya.

#### 4.4 Regression Analysis

In this study, a multiple regression analysis was conducted to test the influence among predictor variables. The research used statistical package for social sciences (SPSS V 22) to code, enter and compute the measurements of the multiple regressions. Analysis was done between the dependent variable and independent variables where financial performance was the dependent variable and contracting-out revenue collection and electronic revenue collection were the independent variables.

**Table 4.4: Model of Revenue Collection Techniques Effect**

| Model | R                 | R Square | Adjusted Square | RStd. Error of the Estimate | Change Statistics | R Square Change | F Change | Sig. F Change |
|-------|-------------------|----------|-----------------|-----------------------------|-------------------|-----------------|----------|---------------|
| 1     | .964 <sup>a</sup> | .928     | .925            | .15186                      | .928              |                 | 265.681  | .000          |

**Source: Research Finding**

From the findings in table 4.4, Adjusted R Squared  $R^2$  was 0.925,  $F=265.681$ ,  $p= < 0.01$  is coefficient of determination which tells us the variation in the dependent variable (Financial Performance) due to changes in the independent variables (Contracting-out revenue collection to agencies and electronic revenue collection), from the findings in table above the value of adjusted R squared was 0.925 an indication that there was variation of 92.5% on financial performance of Kisumu County Government, due to changes in contracting-out revenue collection and electronic revenue collection at 95% confidence interval. This shows

that 92.8% changes in performance of Kisumu County Government could be accounted for by contracting-out revenue collection and electronic revenue collection and 7.2% cannot be explained by them. That is to say the independent variables could explain and predict financial performance of Kisumu County Government by 92.8%. R is the correlation coefficient which shows the relationship between the study variables, from the findings shown in table 4.4 above there was a strong positive relationship between the study variables as shown by 0.964.

**Table 4.5: Revenue Collection Techniques Effect on Financial Performance**

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

| Model |            | Sum of Squares | Df | Mean Square | F       | Sig.              |
|-------|------------|----------------|----|-------------|---------|-------------------|
| 1     | Regression | 19.087         | 2  | 9.543       | 452.049 | .000 <sup>b</sup> |
|       | Residual   | 1.351          | 64 | .021        |         |                   |
|       | Total      | 20.438         | 66 |             |         |                   |

**a.** Dependent Variable: Financial Performance

**b.** Predictors: (Constant), Contracting-out revenue collection to agencies and Electronic revenue collection

**b.** Source: Computed from field data

Table 4.5 shows that the Regression Variation 19.087 was due to interaction in samples between the predictor variables while the residual Variation 1.359 was due to differences within individual samples. From the ANOVA statistics, the table provides F statistics 452.049,  $p=0.000 < 0.01$  which shows that the data is ideal for making a conclusions on the population's parameter as the value of significance (p-value ) is less than 5%. The significance value was less than 0.05, an indication that the model statistically fitted the research data.

**Table 4.6: Coefficients**

| Model                              | Coefficients <sup>a</sup>   |            |                           |        |      |
|------------------------------------|-----------------------------|------------|---------------------------|--------|------|
|                                    | Unstandardized Coefficients |            | Standardized Coefficients | t      | Sig. |
|                                    | B                           | Std. Error | Beta                      |        |      |
| (Constant)                         | .785                        | .118       |                           | 6.628  | .000 |
| Contracting out Revenue Collection | -.218                       | .083       | -.207                     | -2.633 | .011 |
| Electronic Revenue Collection      | 1.138                       | .078       | 1.151                     | 14.664 | .000 |

**a. Dependent Variable: Financial Performance****c. Source: Research Findings**

From the data shown in table 4.6 above, the established regression equation was:

$$Y = 0.785 - 0.218X_1 + 1.138X_2 + 0.118$$

According to the regression equation established, taking the two revenue collection techniques (Contracting-out revenue and electronic revenue collection), constant at zero, the financial performance of Kisumu County Government would be at 0.785 units. The findings show that taking all the independent variables at zero, a unit increase in contracting out revenue collection will lead to -0.218 inverse influence on financial performance of Kisumu County Government indicating that the financial performance of Kisumu County Government is negatively influenced by contracting-out revenue collection. A unit increase in electronic revenue collection will lead to 1.138 units increase influence on financial performance of Kisumu County Government, Kenya.

At 5% level of significance and 95% confidence level contracting-out revenue collection had a 0.011 level of significance; electronic revenue collection showed a 0.000 level of significance; hence the most significant factor is electronic revenue collection. On the whole electronic revenue collection had the greatest effect on the performance. All the variables were significant ( $p < 0.05$ ).

The inferential analysis carried out established the effect of revenue collection techniques on financial performance of Kisumu County government. The study results indicated that the

independent variables of revenue collection techniques explained and could predict financial performance of Kisumu County Government, Kenya. The independent variables could explain 92.8% of the financial performance of Kisumu County Government, Kenya.

#### **4.5 Discussions**

Contracting-out revenue collection to agencies and electronic revenue collection are the main techniques identified as the revenue collection techniques used by Kisumu County Government to determine effect on financial performance. Contracting revenue collection and electronic revenue collection were both significantly correlated to and predictors of financial performance, and this supports the stated specific objectives of this study.

From the results of the current study on contracting-out revenue collection on financial performance, it was found out that the results are in consistence with the previous studies as earlier reviewed by Awortwi (2012) and Kamanga and Ismail (2016). Awortwi (2012) conducted a study on contracting-out local government services to private agents in Ghana. He used interview method to interview households in their houses using a report card method. The study results indicated a negative correlation between contract documents and agents; performance. On the other hand the study of Kamanga and Ismail (2016) to study the effect of outsourcing on organizational performance in a manufacturing sector applied descriptive statistics and inferential analysis with correlation and regression analysis by use of SPSS. Based on the findings, they recommended that organizations should not outsource an activity fully until they have confirmed beyond doubt that the service provider is capable of handling the activity. These studies were in agreement with the current study that found out that contracting-out revenue collection has a negative effect on financial performance.

Contrastingly, studies of Greve and Coelho (2017) revealed contradicting result on their study to evaluate the impact of contracting-out basic health care services in Brazil. Their study findings showed that implementation of the of the contracting-out strategy significantly increases the number of primary health care appointments by approximately one appointment per user of the national health care system per year. The study finding was in contrast with findings of the current study.

Electronic revenue collection is another main revenue collection techniques identified as



revenue collection techniques used by Kisumu County Government. Some of the previous studies whose results were in consistence with the current study concerning electronic revenue collection and financial performance were the studies of Madegwa et al. (2018), Otieno et al. (2013) and Okiro (2015). In the study of Madegwa et al. (2018) which sought to assess the impact of automation of revenue collection process on organization performance, analyzed quantitative data by descriptive analysis and SPSS and established that online process influences performance of organizations to a great extent.

The study of Okiro (2015) on effect of E- Payment system on revenue collection, collected data from secondary sources and analyzed them using both descriptive and inferential statistics found out that adoption of e-payment system positively influences the revenue collection performance. These studies are in consistence with the current study as they all conclude that increase in electronic revenue collection increases financial performance.

On the contrary studies of Muturi and Kiarie (2015) contradicts with the current study results. Their study of effect of online tax system on tax compliance among small taxpayers used both Correlation and Regression analyses and found out that online tax system does not affect tax compliance level among small tax payers. This is a contradicting result as compared to the present study findings.

From the present study findings, electronic revenue collection process saves on time and cost of revenue collection and enhances efficiency of the process, this is confirmed by the Optimal Taxation Theory that aims to maximize the cost of raising revenue and for optimal revenue to be achieved , the marginal cost of raising public funds equalizes tax instruments and all Government Units.

## **CHAPTER FIVE**

### **SUMMARY, CONCLUSION AND RECOMMENDATIONS**

#### **5.1 Introduction**

From the analysis and data collected, the following discussions, conclusion and recommendations were made. The responses were based on the objectives of the study. The study had intended to establish the effect of revenue collection techniques on financial performance of Kisumu County Government, Kenya.

#### **5.2 Summary**

The objective of the study was to determine the effect of revenue collection techniques on financial performance of Kisumu County Government, Kenya: From the finding in the adjusted R squared the study found that variation on performance of Kisumu County Government could be accounted for by contracting-out revenue collection and electronic revenue collection.. From the correlation coefficient, there was a strong positive relationship between the study variables.

The study found that the model had a significance level which shows that the data is ideal for making conclusions on the population's parameter as the value of significance is less than 5%. The study further revealed that contracting-out revenue collection and electronic revenue collection significantly affected the performance of Kisumu County Government.

From the regression equation it was revealed that contracting-out revenue collection had a negative relationship with performance of Kisumu County Government and significant positive effect between electronic revenue collection and financial performance of Kisumu County Government Kenya.

#### **5.3 Conclusion**

From the findings of objective one which sought to determine the effect of contracting-out revenue collection to agencies on financial performance of Kisumu County Government, Kenya. The study concludes that contracting-out revenue collection to agencies had a

negative significant effect on financial performance. This implies that a unit increase in contracting-out revenue collection significantly reduces financial performance of Kisumu County Government. In this respect it provides an explanation to the earlier contradicting results on impact of contracting-out basic health care services in Brazil.

Objective two of the study sought to assess the effect of electronic revenue collection on financial performance of Kisumu County Government, Kenya. From the findings, the study concludes that electronic revenue collection had a positive significant effect on financial performance of Kisumu County Government. Meaning for every unit increase of variation of electronic revenue collection, financial performance of Kisumu County Government increases significantly. Which concurs with the earlier study on automation of revenue collection in Washington DC.

The study further concludes that electronic revenue collection processes offers great deal of effective management; electronic tax collection also brings about efficiency and effectiveness in the declaration and subsequent payment of tax due; electronic revenue collection processes saves time; saves the cost; and that enhances the efficiency of the process.

#### **5.4 Recommendations for Policy**

From The findings and conclusion, contracting-out revenue collection to agencies showed a negative effect on financial performance of county governments. Therefore the study recommends that for those counties that contract out revenue collections to constantly check out as this will reduce financial performance and/or alternatively apply structured control measures over the vendors to avoid potential risks associated with contracting-out revenue collections.

In the second scenario of electronic revenue collection the study recommends that there is need for the County governments to effectively implement electronic revenue collection as it was found that electronic revenue collection positively influences financial performance of County governments.

It was established that electronic revenue collection processes aids payment and accounting, to register and account for payments made to the County. As a result, the study recommends

that County ICT department officers to ensure effective coordination of this technique to enhance optimal revenue collection by Kisumu County Government.

The study further found out that electronic revenue collection processes offers great deal of effective management. However, the electronic process may not work well if the equipment in place are substandard. This study therefore recommends that the equipment purchased for this purpose to be of high quality and maintained regularly. And a further recommendation to the procurement section to take the initiative to procure sufficient gargets that equate to the number of revenue collection streams.

### **5.5 Limitations of the Study**

The limitation of this study was that some respondents refused to fill in the questionnaires and some respondents decided to withhold information which they considered sensitive and classified. This reduced the probability of reaching a more conclusive study.

Secondly; since the study used questionnaire to capture important information pertaining to population with reference to study objectives. The researcher could have used a researcher administered questionnaire instead of self-administered because some respondents needed direction and assistance on how to fill the questionnaire.

### **5.6 Areas for Further Research**

The study generalized on the effect of revenue collection techniques on financial performance which led to general findings and conclusions.

There is therefore the need to zero in on the effect of each of each of the variables on financial performance of county governments. A similar study should also be done on other counties since their operations may be different from that of Kisumu County based on their geographical positioning.

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## APPENDICES

### Appendix I: Questionnaire

#### Introduction

This questionnaire is meant to help in collecting data for the study “Effect of Revenue Collection Techniques on Financial Performance in Kisumu County Government, Kenya.” You have been identified as a potential respondent for which you are kindly requested to complete the questionnaire and give any additional information you feel is crucial to the study. The information given is absolutely for academic purposes only and shall be treated with the utmost confidentiality it deserves. Kindly respond to the best of your knowledge.

#### A) General Information

1. Name of respondent (**Optional**).....

2. Age of respondent (tick as applicable)

- a. 20 – 25
- b. 26 – 30
- c. 31 – 35
- d. 36 – 40
- e. 41 – 45
- f. 46 – 50
- g. 51 – 55
- h. 56 – 60
- i. Above 60

3. Gender (**Tick as applicable**)

Female  Male

4. Education background (**tick as applicable**)

- a. Primary
- b. Form IV
- c. Certificate
- d. Diploma
- 
- 
-

- e. Undergraduate Degree
- f. Master's Degree
- g. PhD

5. Nature of employment (**tick as appropriate**)

- a. Temporary
- b. Permanent
- c. Contract

6. Job description (**please tick**)

- a. Revenue clerk
- b. Revenue officer
- c. Revenue accountant
- d. Director revenue
- e. Revenue Supervisor

7. How long have you served in the department? **Please specify**

.....

8. What revenue collection techniques do you consider effective in collecting revenue for Kisumu County Government (**tick as appropriate**)

- a. Manual
- b. Electronic
- c. Contracting out revenue collection to agencies
- d. Single integrated revenue collection system
- e. Tax payers assessment
- f. Designating revenue collection points for convenience
- g. Voluntary compliance
- h. Others, please specify .....

**B) Information on contracting out revenue collection to agencies**

1. Does Kisumu County Government contract out its revenue collection services to agencies? (**tick as applicable**)

- Yes  No

2. If Yes, which services does Kisumu County Government contract out to agencies (please mention)

.....

3. Please tick as applicable

The numbers represent the following responses:

- 1 – **Strongly Agree**      2 – **Agree**      3 – **Neutral**      4 – **Disagree**  
 5 – **Strongly Disagree**

| S/No | Questions   | 1 | 2 | 3 | 4 | 5 |
|------|---|---|---|---|---|---|
| i)   | Contracting out revenue collection to agencies saves on cost of revenue collection.                       |   |   |   |   |   |
| ii)  | Contracting out revenue collection to agencies improves revenue collection efficiency.                    |   |   |   |   |   |
| iii) | Contracting out revenue collection to agencies enhance collection of sufficient and optimal revenue.      |   |   |   |   |   |
| iv)  | Revenue collection to agencies help Kisumu County Government achieve revenue collection objective.        |   |   |   |   |   |
| v)   | Contracting out revenue collection to agencies improves financial performance of Kisumu County Government |   |   |   |   |   |

**C) Information on Electronic Revenue Collection:**

Has Kisumu County Government adopted the use of electronic revenue collection technique? (**Tick as appropriate**)

Yes                       No

If YES, have you attended ICT Training: Yes                       No

The numbers represent the following responses:

1 – **Strongly Agree**      2 – **Agree**      3 – **Neutral**      4 – **Disagree**

5 – **Strongly Disagree**

| S/No  | Questions  | 1 | 2 | 3 | 4 | 5 |
|-------|--|---|---|---|---|---|
| i)    | In your view, do you think having knowledge in ICT use helps enhance revenue collection in Kisumu County Government  |   |   |   |   |   |
| ii)   | Has there been an improvement in revenue collection since the adoption of electronic revenue collection by Kisumu County Government                                |   |   |   |   |   |
| iii)  | Electronic Revenue Collection has reduced cost of revenue collection in Kisumu County Government   |   |   |   |   |   |
| iv)   | Since the adoption of Electronic Revenue Collection technique Kisumu County Government has collected sufficient revenue to enable it run its programs effectively. |   |   |   |   |   |
| v)    | The adoption of Electronic Revenue Collection technique has reduced the loopholes or weaknesses in revenue collection  |   |   |   |   |   |
| vi)   | Adoption of Electronic Revenue Collection has captured all the potential revenue base or revenue streams   |   |   |   |   |   |
| vii)  | Adoption of Electronic Revenue Collection technique has enabled Kisumu County Government to know the number of tax payers in the county                            |   |   |   |   |   |
| viii) | Adoption of ICT has enabled Kisumu County Government to reduce leakages in revenue collection.   |   |   |   |   |   |

**Thank you for your cooperation**



## Appendix II: Data Collection Sheet

Name of County: Kisumu County Government.

| <b>YEARS</b> | <b>REVENUE PERFORMANCE OF<br/>INDEPENDENT VARIABLES</b> |          | <b>CHANGE IN<br/>PERFORMANCE</b> |
|--------------|---|----------|----------------------------------|
| <b>F/Y</b>   | <b>AMOUNT<br/>(Kshs.)</b>                               | <b>%</b> | <b>%</b>                         |
| 2014-2015    | 970,903,407   | 65       | -                                |
| 2015-2016    | 984,794,407   | 53       | -12                              |
| 2016-2017    | 1,004,043,906   | 63       | 10                               |
| 2017-2018    | 874,598,051   | 76       | 13                               |

| Q100 | Q102 | Q103 | Q104 | Q105 | Q106 | Q108 | Q201 | Q203a | Q203b | Q203c | Q203d | Q203e | Q301 | Q302 | Q303a | Q303b | Q303c | Q303d | Q303e | Q303f | Q303g | Q303h |
|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|
| 4.00 | 2.00 | 5.00 | 3.00 | 2.00 | 2.00 | 1.00 | 2.00 | 1.00  | 2.00  | 3.00  | 2.00  | 3.00  | 2.00 | 1.00 | 1.00  | 1.00  | 2.00  | 4.00  | 2.00  | 3.00  | 2.00  | 3.00  |
| 4.00 | 1.00 | 5.00 | 2.00 | 5.00 | 2.00 | 1.00 | 3.00 | 3.00  | 3.00  | 3.00  | 3.00  | 3.00  | 1.00 | 1.00 | 2.00  | 3.00  | 3.00  | 3.00  | 3.00  | 3.00  | 3.00  | 3.00  |
| 6.00 | 1.00 | 3.00 | 2.00 | 2.00 | 1.00 | 1.00 | 5.00 | 5.00  | 5.00  | 3.00  | 4.00  | 1.00  | 1.00 | 3.00 | 4.00  | 1.00  | 4.00  | 4.00  | 4.00  | 4.00  | 3.00  | 4.00  |
| 2.00 | 2.00 | 5.00 | 3.00 | 1.00 | 2.00 | 1.00 | 2.00 | 2.00  | 2.00  | 3.00  | 2.00  | 2.00  | 1.00 | 1.00 | 2.00  | 2.00  | 3.00  | 3.00  | 2.00  | 1.00  | 4.00  | 3.00  |
| 3.00 | 1.00 | 4.00 | 3.00 | 1.00 | 2.00 | 1.00 | 2.00 | 2.00  | 2.00  | 3.00  | 3.00  | 1.00  | 1.00 | 1.00 | 1.00  | 2.00  | 3.00  | 1.00  | 3.00  | 3.00  | 2.00  | 2.00  |
| 1.00 | 2.00 | 5.00 | 3.00 | 1.00 | 3.00 | 1.00 | 2.00 | 2.00  | 2.00  | 2.00  | 3.00  | 2.00  | 1.00 | 1.00 | 2.00  | 2.00  | 3.00  | 2.00  | 2.00  | 3.00  | 3.00  | 3.00  |
| 2.00 | 1.00 | 5.00 | 3.00 | 1.00 | 5.00 | 1.00 | 2.00 | 2.00  | 2.00  | 3.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00  | 3.00  | 2.00  | 3.00  | 3.00  | 5.00  | 3.00  |
| 3.00 | 1.00 | 4.00 | 2.00 | 1.00 | 1.00 | 2.00 | 5.00 | 4.00  | 5.00  | 5.00  | 5.00  | 5.00  | 1.00 | 1.00 | 5.00  | 2.00  | 5.00  | 3.00  | 1.00  | 5.00  | 3.00  | 5.00  |
| 2.00 | 1.00 | 4.00 | 2.00 | 1.00 | 1.00 | 2.00 | 2.00 | 3.00  | 3.00  | 2.00  | 2.00  | 2.00  | 1.00 | 1.00 | 2.00  | 2.00  | 2.00  | 3.00  | 2.00  | 4.00  | 4.00  | 2.00  |
| 5.00 | 1.00 | 6.00 | 2.00 | 5.00 | 1.00 | 2.00 | 2.00 | 3.00  | 2.00  | 3.00  | 3.00  | 3.00  | 1.00 | 1.00 | 2.00  | 2.00  | 4.00  | 3.00  | 2.00  | 3.00  | 3.00  | 3.00  |
| 7.00 | 2.00 | 4.00 | 2.00 | 1.00 | 1.00 | 1.00 | 5.00 | 5.00  | 5.00  | 5.00  | 5.00  | 5.00  | 1.00 | 1.00 | 2.00  | 4.00  | 1.00  | 5.00  | 5.00  | 5.00  | 5.00  | 5.00  |
| 4.00 | 2.00 | 4.00 | 2.00 | 1.00 | 6.00 | 1.00 | 3.00 | 1.00  | 2.00  | 1.00  | 5.00  | 1.00  | 2.00 | 3.00 | 2.00  | 4.00  | 2.00  | 4.00  | 2.00  | 1.00  | 2.00  | 2.00  |
| 1.00 | 2.00 | 4.00 | 3.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00  | 1.00  | 2.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 2.00  | 1.00  | 1.00  | 2.00  | 3.00  | 1.00  | 2.00  |
| 1.00 | 1.00 | 4.00 | 3.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  | 2.00  | 3.00  | 1.00 | 1.00 | 1.00  | 2.00  | 2.00  | 1.00  | 2.00  | 2.00  | 1.00  | 3.00  |
| 4.00 | 1.00 | 2.00 | 2.00 | 5.00 | 1.00 | 1.00 | 2.00 | 3.00  | 3.00  | 2.00  | 3.00  | 1.00  | 1.00 | 1.00 | 2.00  | 4.00  | 2.00  | 4.00  | 2.00  | 1.00  | 3.00  | 3.00  |
| 1.00 | 1.00 | 5.00 | 3.00 | 5.00 | 3.00 | 1.00 | 1.00 | 2.00  | 2.00  | 2.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 2.00  | 3.00  | 1.00  | 2.00  | 2.00  | 2.00  | 2.00  |
| 1.00 | 2.00 | 5.00 | 3.00 | 1.00 | 3.00 | 1.00 | 4.00 | 1.00  | 1.00  | 1.00  | 2.00  | 1.00  | 1.00 | 1.00 | 1.00  | 4.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  |
| 3.00 | 2.00 | 4.00 | 3.00 | 1.00 | 2.00 | 1.00 | 4.00 | 1.00  | 1.00  | 1.00  | 2.00  | 2.00  | 1.00 | 1.00 | 1.00  | 2.00  | 4.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  |
| 1.00 | 1.00 | 5.00 | 3.00 | 2.00 | 1.00 | 1.00 | 2.00 | 2.00  | 3.00  | 2.00  | 3.00  | 2.00  | 3.00 | 2.00 | 2.00  | 2.00  | 2.00  | 3.00  | 2.00  | 2.00  | 4.00  | 2.00  |
| 1.00 | 1.00 | 2.00 | 3.00 | 1.00 | 2.00 | 2.00 | 2.00 | 2.00  | 2.00  | 4.00  | 3.00  | 1.00  | 2.00 | 2.00 | 3.00  | 4.00  | 4.00  | 4.00  | 2.00  | 2.00  | 2.00  | 2.00  |
| 1.00 | 2.00 | 4.00 | 1.00 | 1.00 | 2.00 | 1.00 | 1.00 | 2.00  | 1.00  | 2.00  | 2.00  | 2.00  | 2.00 | 2.00 | 1.00  | 1.00  | 1.00  | 2.00  | 1.00  | 1.00  | 1.00  | 2.00  |
| 1.00 | 1.00 | 5.00 | 3.00 | 1.00 | 2.00 | 1.00 | 3.00 | 2.00  | 2.00  | 2.00  | 3.00  | 1.00  | 1.00 | 1.00 | 2.00  | 3.00  | 3.00  | 3.00  | 3.00  | 3.00  | 3.00  | 3.00  |
| 1.00 | 1.00 | 4.00 | 3.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00  | 1.00  | 3.00  | 2.00  | 3.00  | 1.00 | 2.00 | 2.00  | 3.00  | 1.00  | 2.00  | 1.00  | 3.00  | 2.00  | 3.00  |
| 1.00 | 2.00 | 5.00 | 1.00 | 1.00 | 2.00 | 1.00 | 1.00 | 2.00  | 1.00  | 2.00  | 2.00  | 2.00  | 2.00 | 2.00 | 1.00  | 1.00  | 1.00  | 3.00  | 3.00  | 1.00  | 3.00  | 3.00  |
| 1.00 | 1.00 | 5.00 | 3.00 | 1.00 | 1.00 | 1.00 | 3.00 | 3.00  | 3.00  | 3.00  | 3.00  | 3.00  | 1.00 | 2.00 | 4.00  | 4.00  | 4.00  | 3.00  | 3.00  | 3.00  | 3.00  | 3.00  |
| 7.00 | 1.00 | 6.00 | 3.00 | 5.00 | 1.00 | 1.00 | 2.00 | 1.00  | 3.00  | 1.00  | 5.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00  | 4.00  | 4.00  | 5.00  | 3.00  | 2.00  | 4.00  |
| 8.00 | 2.00 | 6.00 | 3.00 | 4.00 | 3.00 | 1.00 | 2.00 | 1.00  | 2.00  | 1.00  | 3.00  | 1.00  | 2.00 | 1.00 | 3.00  | 4.00  | 4.00  | 2.00  | 1.00  | 4.00  | 4.00  | 4.00  |
| 6.00 | 1.00 | 3.00 | 1.00 | 1.00 | 3.00 | 1.00 | 1.00 | 1.00  | 1.00  | 3.00  | 5.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00  | 2.00  | 3.00  | 3.00  | 3.00  | 3.00  | 5.00  |
| 2.00 | 1.00 | 5.00 | 1.00 | 2.00 | 3.00 | 1.00 | 1.00 | 1.00  | 1.00  | 2.00  | 3.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  | 4.00  | 1.00  | 1.00  | 3.00  | 5.00  |
| 4.00 | 2.00 | 5.00 | 3.00 | 2.00 | 3.00 | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  | 3.00  | 4.00  | 2.00 | 3.00 | 3.00  | 4.00  | 4.00  | 4.00  | 4.00  | 3.00  | 4.00  | 5.00  |
| 1.00 | 2.00 | 3.00 | 1.00 | 1.00 | 3.00 | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  | 2.00  | 4.00  | 1.00 | 1.00 | 1.00  | 1.00  | 2.00  | 2.00  | 2.00  | 4.00  | 3.00  | 5.00  |
| 4.00 | 1.00 | 4.00 | 3.00 | 3.00 | 3.00 | 1.00 | 1.00 | 1.00  | 3.00  | 4.00  | 5.00  | 1.00  | 2.00 | 1.00 | 1.00  | 1.00  | 1.00  | 4.00  | 2.00  | 1.00  | 3.00  | 5.00  |
| 2.00 | 2.00 | 4.00 | 3.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  | 5.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00  | 4.00  | 2.00  | 3.00  | 3.00  | 5.00  | 5.00  |

|      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 4.00 | 1.00 | 5.00 | 1.00 | 1.00 | 3.00 | 2.00 | 1.00 | 2.00 |      | 1.00 | 4.00 | 2.00 |      | 1.00 | 4.00 | 3.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| 5.00 | 1.00 | 5.00 | 3.00 | 5.00 | 3.00 | 1.00 | 1.00 | 1.00 | 2.00 | 3.00 | 5.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 4.00 | 3.00 | 3.00 | 3.00 | 5.00 |
| 4.00 | 1.00 | 4.00 | 2.00 | 2.00 | 4.00 | 1.00 | 3.00 | 2.00 | 2.00 | 3.00 | 3.00 | 1.00 | 1.00 | 1.00 | 3.00 | 3.00 | 3.00 | 3.00 | 3.00 | 3.00 | 3.00 |
| 6.00 | 1.00 | 3.00 | 2.00 | 2.00 | 6.00 | 1.00 | 4.00 | 3.00 | 3.00 | 3.00 | 4.00 | 1.00 | 1.00 | 1.00 | 3.00 | 3.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| 2.00 | 2.00 | 3.00 | 3.00 | 1.00 | 2.00 | 2.00 | 3.00 |      | 2.00 | 3.00 | 3.00 | 2.00 |      | 2.00 | 1.00 | 2.00 | 3.00 | 3.00 | 2.00 | 4.00 | 2.00 |
| 1.00 | 2.00 | 3.00 | 3.00 | 1.00 | 2.00 | 1.00 | 1.00 | 2.00 | 1.00 | 3.00 | 3.00 | 1.00 | 2.00 | 2.00 | 3.00 | 2.00 | 2.00 | 2.00 | 3.00 | 2.00 | 4.00 |
| 2.00 | 1.00 | 4.00 | 3.00 | 1.00 | 2.00 | 1.00 | 1.00 | 2.00 | 3.00 | 1.00 | 2.00 | 1.00 | 1.00 | 1.00 | 2.00 | 3.00 | 2.00 | 2.00 | 3.00 | 3.00 | 2.00 |
| 1.00 | 2.00 | 2.00 | 3.00 | 1.00 | 2.00 | 2.00 | 3.00 | 4.00 | 4.00 | 4.00 | 4.00 | 1.00 | 1.00 | 2.00 | 2.00 | 3.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| 2.00 | 1.00 | 4.00 | 1.00 | 1.00 | 3.00 | 1.00 | 1.00 | 2.00 | 2.00 | 3.00 | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 3.00 | 1.00 | 2.00 | 2.00 | 4.00 | 2.00 |
| 3.00 | 2.00 | 3.00 | 3.00 | 1.00 | 3.00 | 1.00 | 1.00 | 2.00 | 1.00 | 2.00 | 3.00 | 1.00 | 1.00 | 2.00 | 3.00 | 3.00 | 4.00 | 1.00 | 3.00 | 2.00 | 3.00 |
| 2.00 | 2.00 | 3.00 | 3.00 | 1.00 | 3.00 | 1.00 | 2.00 | 3.00 | 1.00 | 2.00 | 2.00 | 1.00 | 1.00 | 2.00 | 2.00 | 1.00 | 3.00 | 2.00 | 3.00 | 2.00 | 1.00 |
| 1.00 | 1.00 | 4.00 | 3.00 | 1.00 | 2.00 | 1.00 | 1.00 | 2.00 | 2.00 | 1.00 | 2.00 | 1.00 | 1.00 | 2.00 | 1.00 | 2.00 | 2.00 | 2.00 | 1.00 | 3.00 | 2.00 |
| 3.00 | 2.00 | 4.00 | 3.00 | 1.00 | 4.00 | 1.00 |      |      |      |      |      |      | 1.00 | 2.00 | 2.00 | 2.00 | 3.00 | 3.00 | 2.00 | 3.00 | 4.00 |
| 3.00 | 1.00 | 2.00 | 1.00 | 1.00 | 6.00 | 2.00 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 3.00 | 1.00 | 5.00 | 3.00 | 1.00 | 3.00 | 1.00 | 3.00 | 2.00 | 3.00 | 2.00 | 2.00 | 1.00 | 1.00 | 3.00 | 2.00 | 2.00 | 3.00 | 2.00 | 2.00 | 4.00 | 3.00 |
| 3.00 | 1.00 | 4.00 | 3.00 | 1.00 | 2.00 | 1.00 | 3.00 | 3.00 | 5.00 | 5.00 | 4.00 | 1.00 | 2.00 | 3.00 | 3.00 | 3.00 | 4.00 | 3.00 | 4.00 | 2.00 | 3.00 |
| 3.00 | 2.00 | 5.00 | 3.00 | 1.00 | 2.00 | 1.00 | 4.00 | 2.00 | 2.00 | 1.00 | 3.00 | 1.00 | 2.00 | 3.00 | 2.00 | 4.00 | 2.00 | 2.00 | 4.00 | 4.00 | 2.00 |
| 4.00 | 2.00 | 5.00 | 3.00 | 1.00 | 2.00 | 1.00 | 4.00 | 2.00 | 3.00 | 3.00 | 3.00 |      |      | 2.00 | 3.00 | 2.00 | 3.00 | 3.00 | 3.00 | 3.00 | 3.00 |
| 2.00 | 1.00 | 5.00 | 3.00 | 1.00 | 3.00 | 1.00 | 2.00 | 2.00 | 2.00 | 3.00 | 2.00 | 1.00 | 1.00 | 2.00 | 2.00 | 3.00 | 3.00 | 2.00 | 4.00 | 4.00 | 2.00 |
| 4.00 | 1.00 | 5.00 | 3.00 | 1.00 | 4.00 | 1.00 | 3.00 | 4.00 | 3.00 | 1.00 | 4.00 | 1.00 | 2.00 | 2.00 | 4.00 | 3.00 | 3.00 | 2.00 | 4.00 | 5.00 | 3.00 |
| 2.00 | 2.00 | 4.00 | 3.00 | 1.00 | 4.00 | 1.00 | 5.00 | 5.00 | 5.00 | 5.00 | 3.00 | 1.00 | 2.00 | 2.00 | 3.00 | 5.00 | 3.00 | 2.00 | 1.00 | 1.00 | 2.00 |
| 2.00 | 2.00 | 5.00 | 3.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| 1.00 | 2.00 | 4.00 | 3.00 | 2.00 | 3.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 2.00 | 3.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| 3.00 | 2.00 | 5.00 | 3.00 | 5.00 | 3.00 | 1.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 3.00 | 2.00 | 2.00 | 4.00 | 2.00 | 4.00 | 5.00 | 1.00 |
| 1.00 | 2.00 | 4.00 | 3.00 | 2.00 | 2.00 | 2.00 | 1.00 | 2.00 | 3.00 | 1.00 | 2.00 | 2.00 |      | 1.00 | 2.00 | 2.00 | 1.00 | 3.00 | 2.00 | 2.00 | 1.00 |
| 2.00 | 1.00 | 5.00 | 1.00 | 1.00 | 3.00 | 1.00 | 2.00 | 2.00 | 3.00 | 2.00 | 3.00 | 1.00 | 2.00 | 3.00 | 2.00 | 4.00 | 2.00 | 3.00 | 4.00 | 4.00 | 3.00 |
| 3.00 | 2.00 | 4.00 | 1.00 | 1.00 | 2.00 | 1.00 | 2.00 | 1.00 | 1.00 | 2.00 | 3.00 | 1.00 | 2.00 | 3.00 | 2.00 | 2.00 | 3.00 | 2.00 | 4.00 | 5.00 | 2.00 |
| 1.00 | 2.00 | 4.00 | 3.00 | 2.00 | 2.00 | 1.00 | 3.00 | 3.00 | 3.00 | 3.00 | 3.00 | 1.00 | 1.00 | 3.00 | 3.00 | 3.00 | 3.00 | 3.00 | 3.00 | 3.00 | 3.00 |
| 1.00 | 2.00 | 5.00 | 3.00 | 2.00 | 2.00 | 2.00 | 2.00 | 3.00 |      | 2.00 | 3.00 | 2.00 |      | 1.00 | 2.00 | 3.00 | 2.00 |      | 2.00 | 3.00 | 1.00 |
| 2.00 | 2.00 | 4.00 | 2.00 | 2.00 | 2.00 | 2.00 | 1.00 | 2.00 | 3.00 | 1.00 | 2.00 | 2.00 |      | 1.00 | 3.00 | 1.00 | 1.00 | 2.00 |      | 1.00 | 3.00 |
| 3.00 | 1.00 | 1.00 | 2.00 | 4.00 | 1.00 | 2.00 | 1.00 | 5.00 | 2.00 | 5.00 | 3.00 | 2.00 |      | 2.00 | 3.00 | 1.00 | 2.00 | 1.00 | 2.00 | 1.00 | 3.00 |
| 4.00 | 1.00 | 5.00 | 3.00 | 5.00 | 2.00 | 1.00 | 3.00 | 2.00 | 3.00 | 2.00 | 3.00 | 1.00 | 1.00 | 2.00 | 2.00 | 3.00 | 4.00 | 2.00 | 3.00 | 4.00 | 1.00 |
| 1.00 | 1.00 | 5.00 | 3.00 | 1.00 | 3.00 | 1.00 | 1.00 | 2.00 | 1.00 | 2.00 | 2.00 | 1.00 | 1.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 4.00 | 1.00 |

### Appendix III: Map of the Study Area

