

**COMPARISON BETWEEN REPRESENTATIVE TAX SYSTEM  
AND MACRO BASIS FOR REVENUE EQUALIZATION SYSTEMS  
IN KENYA**

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## DECLARATION

This research project is my original work and has not been presented for a degree in any other university.

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D61/P/7993/2000

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

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## **DEDICATION**

Dedicate this first to God almighty through whom all things are possible and secondly, to my family for their unlimited support and encouragement.

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I most sincerely thank the Almighty God for helping me to complete this research project despite various challenges I faced during the research.

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## **LIST OF ABBREVIATIONS**

CoK- Constitution of Kenya

CRA – Commission on Revenue Allocation

GDP – Gross Domestic Product

GNP – Gross National Product

KM<sup>2</sup>–Square Kilometers

KNBS – Kenya National Bureau of Statistics

LATF – Local Authority Transfer Fund

RTS – Representative Tax System

TTR– Total Taxable Resources

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## **ABSTRACT**

The aim of this study was to compare the Representative Tax System and macro basis of revenue allocation in Kenya, in relation to equalization systems. The study sought to address the following research question, do the representative tax system and macro basis of revenue allocation ensure equity in the transfer of resources in Kenya. The population of the study comprised of all the 142 (one hundred and forty two) local authorities in Kenya.

The study used descriptive design and a census method. Descriptive survey design was preferred because it enables the researcher to describe the area of research and explain the collected data in order to properly investigate the differences and similarities. The study used secondary data for the last 10 years derived from the financial records of the 142 local authorities in Kenya. Secondary data is important in establishing the relationship between the dependent and the independent variables.

The results of the study indicate that the macro model performs better the variations in funds allocated to counties than the representative tax system. The results also show that population carried the highest weight in explaining factors that affect funds allocated to local authorities with an index of 60%. Other factors which included land area, equal share, fiscal discipline and poverty level had explanation weight of 31%, 27%, 26% and 14% respectively.

The findings indicate that, the relationship between all the variables (that is, poverty level, equal share, land area, fiscal discipline, and population as well as funds allocated to local authorities) with each other is significant at 95% confidence level. The study revealed that, for equalization transfers to county government, population within a particular county is the main consideration given that, the higher the population, the more cost of maintenance of infrastructure given the latter's rate of usage. Given the large jurisdiction to the local authorities the minimum amount allocated to such county will be far much higher.

# CHAPTER ONE

## INTRODUCTION

### 1.1 Background to the study

Equalization is one of the primary fiscal arrangements between the federal government and the counties. Equalization systems are typically designed to make aggregate treatment by government equal across sub national jurisdictions. This is typically done, at least in part, by equalizing potential government revenue by somehow transferring revenues across jurisdictions so that they can afford similar levels of expenditure at similar tax rates. The amounts necessary to transfer are typically calculated on the basis of tax rates and Representative Tax System (RTS) bases (Boadway and Shah, 2007).

Macro basis approach is whereby a single indicator, such as personal consumption of state output is used to measure the potential fiscal capacity of states. The macro basis approach may be better suited for federations, such as those in developing countries, whose public accounting systems make it difficult to apply the representative tax approach and are forced to rely on something simpler (Wilson, 1996).

The representative tax system approach is the one that equalizes the ability to raise revenues based on the actual practices of states in the federation. Because the RTS measures fiscal capacity based on the actual tax systems states use, it implicitly takes account of differences in the ability to raise revenue from different revenue sources. The

system is relatively complicated one, however, and relies on judgments for choosing representative tax bases when states adopt very different policies (Wilson, 1996).

One of the key features of the equalization program is its redistributive role with respect to both fiscal and economic disparities. Accordingly, the equalization program attempts to analyze the redistributive effectiveness of the current Equalization program and its two alternatives; formulas based on macro-economic factors and on fiscal needs. The macro approach to Equalization “measures provinces fiscal capabilities without reference to the actual tax system of the provinces but instead, they are determined on the basis of macro measures of income or production from which taxes are paid (Courchene, 1982). Equalization payments under the macroeconomic approach are calculated using the formula presented by Courchene in his book “Equalization payments: past, present and future”

### **1.1.1 Theoretical Background**

Barro (2002) view a macro base as a simpler approach to equalization, unencumbered by some of the problems of the RTS (such as the rate and base tax-back). For Barro (2002), simplicity is a goal in itself, and the best base is one that best approximates the current equalization results. Boothe and Hermanutz (1999), for example look at three possibilities; provincial Gross Domestic Product (GDP), personal income by province, and an adjusted personal income in which modifications are made from inventories, provincial transfers to individuals and federal taxes paid, settling on the last.

Usher (2002) notes that even in counties with sophisticated accounts, the measurement of bases is not always straightforward. This means that the RTS approach is not as different from the macro approach as theory might have it. In the Canadian system, for example about 45 percent of equalization payments are directly based on personal income taxation. Personal income is also used as the base for several other tax sources, because the true base is hard to measure.

The objective of equalization is to reduce differences in the ability of state governments to provide public services, if not eliminate them altogether. These differences depend not only on the ability to raise revenues but also on the needs and costs of providing public services. Since much of the state spending is no basic public services to citizens, such as education, health and social services, needs for public services will depend on the demographic makeup of the population by age, skill, health status, and so on (Dafflon, 2004).

One of the main criticisms of the RTS approach in Canadian has been its complexity and hence lack of transparency. This has been a major motivation for suggesting the use of some macro measure as the base, although some of the measures suggested as alternatives are themselves quite complicated. In Canada, where provinces have wide taxation powers, 37 provincial revenue sources are included in the calculations. For many of these sources, provinces differ in the exact definition used in tax collection. Provinces may, for example, exempt different items, such as children's clothing from sales taxation. Taxes may be per unit or based on value. This means that bases, for the purpose of

calculating equalization, must be standardized across provinces through negotiation. The resulting “notion” bases may not correspond to any base actually used, and revenues assumed in a province may not correspond to actual revenues. The inclusion of property taxation, where the base is market value, has presented particular problems, as not everyone agrees that high property prices represent an increase in fiscal capacity (Boadway and Shah, 2007).

Codification of equalization schemes is essential for establishing arrangements that foster the stability and sustainability of public budgets within a multi-government framework. Codification also enhances the transparency of budgeting relations and facilitates budget preparation and execution. Most equalization schemes have evolved in response to ad hoc political necessities and claims. Once entrenched, the rules tend to be stubbornly defended, chiefly by government that would lose out under a new scheme. The ad hoc nature of shocks to a transfer scheme, indifference by donor governments, and the military of beneficiaries render major revision of transfer arrangements almost impossible. Two types of equalization schemes can be distinguished; interregional and interpersonal (Spahn, 2004).

Courchene (1984) has analysed the macroeconomic approach to equalization. In his words, the macro approach is a sharp contrast to any alternative because “it measures provincial fiscal capacities without reference to the actual tax system of the province to the actual tax system of the provinces using the measures of income or production from which the taxes are paid”. Currently, many problems come from using RTS; therefore



Courchene (1984) proposes to use the macro-approach as the resolution. Unfortunately, with all its mathematical simplicity, the cons associated with the first of all, if any revisions in the measure of provincial GDP were to take place, it would directly affect the formula. Secondly, concerns may arise regarding the use of the GDP macro base defined as the net of indirect taxes as a replacement of the tax base. Finally, the statement from a background paper of the Departure of France, Courchene (1984) outlines that “the macro base does not relate to the real world of what it is that provinces actually tax, but rather to what they have available to tax.

### **1.1.2 Contextual Background of Revenue Allocation in Kenya**

Commission of Revenue Allocation (CRA) as set up under Article 215 of the constitution of Kenya is the only institution with a legal mandate to provide revenue sharing recommendations to parliament. CRA’s core mandate is to recommend the basis for equitable sharing of revenue raised nationally between the national and the county governments; and sharing of revenue among the county governments. CRA has based its calculations on vertical and horizontal sharing allocations. Vertical allocation is share between the national and county governments is based on the cost of functions of the two levels of governments. Horizontal allocation is the share of revenue among the county governments.

The Commission on Revenue Allocation (CRA) in Kenya, in its proposal has recommended that county governments should receive a total of Kshs. 203 billion representing 33 percent of the national total revenue. The commission on Revenue

Allocation says that in case parliament approves these proposals, the allocation formula below will be employed for the first three financial years under the devolved governance structures.

#### County Equitable Share Formula

$$Ca = \sum (Pi + PVi + Ai + BSi + FDi)$$

Where

Ca = County Equitable Revenue Share

P = County's Share of Population Component

PV = County's Share of Poverty Component

A = County's Share of Land Area Component

BS = County's Equal Share Component

FD = County's Share of Fiscal Discipline Component

County Revenue Share; is a dependent variable. Articles 202 and 203 of Constitution of Kenya (CoK, 2010) provide for the equitable sharing of 15% of revenue raised nationally between county governments.

County's Share of Population Component; is an independent variable. The population parameter was selected due to the fact that the costs of services in any given area depend on the population size.

County's Share of Poverty Component; is an independent variable. The poverty threatens every poor Kenyan irrespective of their location. A sensible government will adopt policies that institutionalize pro-poor programs aimed at getting the rich to supplement the course for the poor.

County's Share of Land Area Component; is an independent variable. The land parameter is based on the fact that the cost of service delivery depends on the size of a county and the formula proposes to allocate an equal amount to each square Kilometre of land. Land size and terrain have a direct relationship with the cost of providing the public goods.

County's Equal Share Component; is an independent variable. Decentralizing and equalizing development across the country can be achieved by capacity to deliver services to the under-developed and rural areas. The gaps in operating systems and processes of counties vary and should be addressed by committing enough financial resources. The weight should equally be applied to put in place systems and processes to address shortfall in skills necessary for the counties to effectively deliver on their mandate.

County's Share of Fiscal Discipline Component; is an independent variable. Fiscal discipline was identified as a parameter that would build financial performance incentive mechanisms that would ensure proper financial management and the exploitation of revenue potential.

**Table 1.1 Commission of Revenue Allocation (KENYA)**

	<b>Parameters</b>	<b>Percentage of sharing</b>
1.	Population	47.6
2.	Equal share	21.6
3.	Poverty	17.9
4.	Land Area	8.3
5.	Fiscal Discipline	3
6.	'Others'	1.6
	<b>Total</b>	<b>100</b>

**Source: Commission of Revenue Allocation Monthly Report (July 2012)**

Parliament will have to approve two funding Bills, the Division of Revenue Bill which deals with sharing of revenues between the national and county governments and the county Allocation of Revenue Bill which relates to the sharing of revenue among the countries, at least two months before the end of each financial year. The Commission of Revenue Allocation also recommended that the Equalization Fund which translates into 0.5 percent of the total revenue of the national government should be disbursed from the financial year 2013/ 2014 at which time it is expected that the county governments will be functioning.

## **1.2 Statement of the Problem**

Wilson (1996) suggests that rather than using the representative tax base to calculate transfers, some more “macro” measures, such as provincial per capita GNP, could, or

should, be used. He further explores the arguments for and against this alternative approach and discusses what the best basis to use in calculating equalization transfer might be. Wilson (1996), again examines whether the Representative Tax System (RTS) or macro bases better satisfies the theoretical justifications for equalization systems and whether, even if the RTS is theoretically better, a macro system could approximate the system in a simpler and less costly manner.

It is important to examine the different types of inter-governmental transfers to be clear about what equalization is meant, and not meant to do. Equalization is not meant to deal with vertical equity, the transfer from rich to poor individuals (Boadway, 2002). It is meant to ensure horizontal equity, the principle that like individuals are treated equally by the government wherever they live. Therefore this study seeks to find out, the comparison between representative tax system and macro basis for equalization systems in Kenya, and whether equity in transfer of resources is fairly accomplished. In several transition economies, local governments are given a share of taxes collected by the Central government. Such sharing is common in all of the former Soviet republics as well as in Hungary, Poland, the Russian Federation, and Ukraine, where some or all of personal income tax is shared.

Part of the reason for this sharing can be found in the growing revenue requirements associated with fiscal decentralization. In the Russian Federation, the central government now shares all its personal income tax a portion of VAT, and a portion of corporate income tax with the oblasts. In Romania local governments have a claim on both profit

and dividend taxes levied by the central government on locally owned enterprises (Bird, Ebel, and Wallich, 1995).

Canada uses macro bases variables to determine equalization though the RTS is still used to define the base. Australia has a body in the name of commonwealth grants commission which regulates the equalization. Their system includes “needs” and “costs” differences in the formula. South Africa’s equalization system, the provincial equitable sharing system depends on needs, as provincial own-source revenues are small. One component of these needs is calculated on the basis of a standard macro bases variable.

Otieno (2009) studied the influence of local authority transfer fund (LATF) on the sustainability of local authorities in Kenya, and singled out the case of Siaya County Council and Siaya Municipal Council in Siaya County. Local authorities play a critical role in the development process and public service delivery in Kenya, as observed by Mitullah (2005), in her research entitled “management of resources by local authorities: the case of local authority transfer fund in Kenya”. Mitullah (2005) again observed that resource allocation method for revenue, workforce and equipment for specific assignments provides local authorities with a decision model for matching assignments with available financial resources, in an optimal way. In other words will ascertain whether the system is appropriate for equitable revenue allocation and transfer to the Kenyan citizens. There has been no study carried out in Kenya on the comparison between representative tax system and macro basis for equalization systems in Kenya. Therefore this necessitates a study to fill the existing knowledge gap. The study seeks to

address the following research question. Do the representative tax system and macro basis of revenue allocation ensure equity in the transfer of resources in Kenya?

### **1.3 Objective of the Study**

To compare the Representative Tax System and macro basis of revenue allocation in Kenya.

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

The study will benefit the Commission of Revenue Allocation in arriving at a formula which will enable it fulfill its core business of allocating revenue to the 47 counties in Kenya. This study will be useful to academicians and scholars interested in the issues of tax system, funds distribution and allocation, and other related equality issues. The study will be beneficial to the government since it will be able to formulate policies, procedures, guidelines on the equalization of transferring resources using the representative tax system (RTS) and macro basis.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

This chapter presents discussions that form the background of this study. It starts with 2.2 which give the theoretical literature of the study, 2.3 which explain the empirical evidence of previous studies in this area of study, 2.4 gives the determinants of revenue allocation, and finally 2.5 which is a summary discussion of the study.

#### **2.2 Theoretical Literature**

The discussion of macro bases has been in the context of countries with well – developed lower-level government tax systems. These provincial tax systems are seen as leading to differences in net fiscal benefits across like individuals in different provinces. The question is whether some macroeconomic variable other than the RTS might be a better basis for equalization to eliminate these differences. In many countries the lower – level government tax base is very limited. Provincial governments may be constitutionally assigned few tax sources, resulting in large fiscal gaps and transfers from the central government to all provinces (Smart, 2002).

Explicit representative tax system capacity equalization grants are common in industrial countries but rare in developing countries. Instead, central government authorities in developing countries have adopted a variety of ad hoc systems to address differences in local fiscal resources while attempting to preserve appropriate incentives for local fiscal



effort (Boadway and Shah, 2007). Any good transfer system, should distribute funds on the basis of a formula. Discretionary or negotiated transfers are always undesirable. The essential ingredients of most formulas for general transfer program (as opposed to matching grants, which are specifically intended to finance narrowly defined projects and activities) are needs, capacity and efforts.

Macro based indicators face measurement issues (Aubut and Vaillancourt, 2001). In addition they serve the objective of redistribution rather than equalization; instead of equalizing the capacity to provide comparable levels of public services at comparable levels of taxation. They attempt to equalize per capita national income within sub national governments.

Three approaches are used to measure the capacity of government units. One is based on macroeconomic figures, such as GNP or national revenue, calculated per government unit and per capita. The other two approaches are derived from the tax system. One is based on the total taxable resources (TTR). The other is based on an RTS for an approximation of taxable capacity. None of these models is exempt from criticism and factual weaknesses (Diffion, 2004).

Transfers are based on a measure of each jurisdiction's potential revenue – raising capacity such as assessed values for property taxes or measured tax bases for other taxes. If all governments choose the target tax rate, capacity differences are fully equalized and all jurisdictions have the same (per capita) fiscal resources of course, if local government

can directly or indirectly manipulate the proxies for capacity used in the transfer formula, capacity equalization may induce undesirable incentives efforts. Indeed, Smart (1998) has argued that capacity equalization may drive local tax rates higher than is desirable from a national point of view. Measured tax bases will generally decrease as tax rates rise for instance, as higher taxes are capitalized in property values and economic activity moves to other jurisdiction (or more lightly taxed transactions). Consequently, local governments that raise their tax rates above the target will see their tax bases depressed and their transfers rise.

Proposals for specific macro basis measures vary, depending partly on the perceived problem with the RTS approach. In general, the proposals are variants of measures of the aggregate resources available to residents of a region. Measuring this exactly needs to be traded off against simplicity, as the complexity of the RTS approach is one of the criticisms leveled against it. Barro (2002) suggest that a correct measure would be provincial GNP modified to take into account taxes paid to, and subsidies received from, the federal government and the ability of the province to raise tax revenue for non-residents by exporting taxes. Others such as Smart (2002) and Boothe and Hermanutz (1991), propose simpler measures, such as provincial GDP. These considerations strongly suggest the use of an equalization formula that is based on potential tax revenues relative to some measures of average potential.

Barro (2002) proposes macro bases as measures of fiscal capacity, by using GNP, or a modification of GNP, as the base on which to calculate transfers. He argues that the best

measure of provincial GDP or provincial GDP modified to take into account transfers to and from the federal government and the possibility of gaining access to further resources by exporting taxes. Barro (2002) argues that whether to spend these overall resources on private or public consumption is a political decision and that only the overall level should thus be considered.

An active debate is under way over horizontal fiscal equalization. The literature on the design of equalization transfer distinguishes between revenue equalization and expenditure, or needs equalization. The combination of both is often referred to as need–capacity gap equalization. The distinction between differences in needs, costs and expenditures, or the need – capacity gap, is far from evident and presents a great deal of conceptual and technical difficulties. Moreover these categories do not inform whether transfers for the purpose of equalization should be horizontal equalization. In order to implement equalization should be horizontal or vertical (Ahmad and Craig, 1997). The needs – capacity gap refers to the residual between revenue capacity and expenditure needs of sub national governments.

Usher (1995) stresses two other related arguments. First is the point that under some circumstances, the RTS approach requires the transfer of revenues from poor provinces, as measured by GNP per capita as the base for calculating equalization would ensure that this could not happen. In Malaysia, for example, the two states on the island of Borneo, Sabah and Sarawak, have the largest share of petroleum resource rents, one of the few revenue sources allocated to the states. In both states, however, average income is well

below the Malaysian average- equalization of state government revenues in this case would require transfers from the poor, at least as measured by average income, to the rich.

## **2.3 Empirical Evidence**

### **2.3.1 Empirical Evidence on Revenue –Sharing Formulas**

In most transition economies, tax sharing is done on the basis of some indicators of origin or accrual (Bird, Ebel, and Wallich 1995). In such systems, the objective of tax sharing is merely to offset vertical fiscal imbalances. Central tax powers use tax sharing to provide subnational governments ensured sources of revenue within the framework of harmonized taxes. This sharing may be required because subnational capacity to administer taxes is lacking, or it may be a deliberate attempt to minimize disharmony in the tax system arising from the subnational levy of taxes.

Some countries have a tax-rental arrangement in which the central government collects the provincial tax and distributes the proceeds on the basis of origin. An important example of the tax-rental arrangement was the leasing of the power to levy income tax by the states to the commonwealth government in Australia during World War II. The arrangement continued even after the war. The states received an income tax entitlement grant that was eventually merged with the general grants given to offset fiscal disabilities on the basis of the estimate of revenue capacity and expenditure need by the Commonwealth Grants Commission (Mathews and Grewal, 1997).

The revenue-sharing systems in India and Pakistan evolved from a common system developed before partition under the Government of India Act, 1939. In both countries, the constitution provides for tax sharing and finance commissions determine the shares provincial governments receive. In Pakistan the constitution of 1973 mandates sharing of the major taxes collected by the central government. The excise duty and royalty on gas, the surcharge on gas, the royalty on crude oil, and profits from hydroelectricity are shared among the provinces on the basis of origin. Revenue from income taxes, sales tax, export duties on cotton, and excise duties on sugar and tobacco are shared by the federal (62.5 percent) and provincial (37.5 percent) governments. Revenues are distributed among the provinces based on population. The scheme of tax sharing is determined by the National Finance Commission, which has a checkered history (Shah, 1998).

In India tax sharing is used extensively, not only to offset vertical fiscal imbalance but also to deal with horizontal imbalances. The distribution and allocation of tax revenues is determined by the Finance Commission, which, over the years, has included a variety of factors capturing backwardness, cost disability, and need—with varying weights assigned to them—in the distribution formula. The most recent (12th) Finance Commission recommended that the states receive 30.5 percent of the tax revenue collected by the central government between 2005 and 2010. The share that individual states receive depends on five factors: population (25 percent weight), distance from the state with the highest per capita GDP (50 percent), area (10 percent), tax effort (7.5 percent), and fiscal discipline (7.5 percent). These factors represent revenue and cost disabilities as well as expenditure needs.

Revenue-sharing systems are intended to provide independent revenue sources to subnational governments by minimizing tax disharmony and distortions. When the revenue share is distributed entirely on the basis of accrual, the system is meant merely to offset vertical fiscal imbalance. Such a system ensures fiscal autonomy to the extent that it provides an independent revenue source, retains its buoyancy over time if the ratio that is shared is not reduced, and minimizes distortions by avoiding tax competition. In some countries, such as Pakistan, the bulk of revenue sharing is based on population (Shah 1998). Population is a basic “need” factor that the system takes into account, and it helps ensure per capita equality. Other cost and revenue disabilities are not considered under this design.

The Indian system takes into account a number of need and performance factors in the tax devolution formula. This design has led to several problems. First, in trying to contain the overall level of transfers, the finance commissions have, over the years, increased the complexity of the formula by including capacity and need variables. The Eighth and Ninth Finance Commissions took into account the inverse of per capita state GDP and the distance from the state with the highest per capita GDP. Second, the choice of variables and the weights assigned reflect the judgments of the commission and are not based on any objective considerations. Third, weighing multiple variables has often caused the effects of one variable to offset the effects of another. The measures of tax effort, for example, were positively related to per capita state GDP. Earlier commissions took both accrual and backwardness into account in distributing income tax. Inclusion of various backwardness variables in the devolution factor by successive commissions created an

incentive for the states to minimize their own interventions to reduce backwardness. Fourth, to provide an incentive for states to adopt an active family planning agenda, the commissions were directed to use 1971 population data wherever population was used in the devolution formula. This factor penalized states with high population growth attributable to migration from other states.

Including capacity and need variables as criteria for tax devolution makes the tax-sharing scheme work as a substitute for block grants. Like grants, such tax sharing tries to offset fiscal disabilities and attempts to resolve both horizontal and vertical fiscal imbalances. Some important differences exist, however.

First, as long as it is possible to measure the disability, unconditional grants to offset revenue and cost disabilities can be targeted to the provinces with the disability. In contrast, tax devolution based on general indicators is received by all provinces, according to the values of the variables they reflect.

Second, the share in taxes increases over time, depending on their buoyancy with respect to incomes and prices. In contrast, unless they are explicitly linked to price changes or a growth rate is explicitly factored in, grants are not responsive to changes in prices and incomes. This could be important when the intergovernmental transfer formula is decided once every five years. Not surprisingly, in their depositions before the finance commissions, the states in India have argued for a larger volume of transfers through tax devolution than through grants.

Third, grants can be designed to affect aggregate fiscal performance in states. In contrast, tax devolution affects only the economic variables chosen for distribution. If any of the variables is within the control of the states, this factor could result in the moral hazard.

### **2.3.2 Empirical Evidence on RTS and Macro Basis**

Most case studies presented in Shah (1996), Ahmad (1997), and Farber and Otto (2003), equalization of the expenditure needs of sub national governments or local governments is vertical. At first sight, only Australia and Denmark seem to be exceptions in horizontal equalization. In order to implement equalization programs, policy makers at higher levels of government require accurate measures of the fiscal condition of lower – level units. Such measures are needed to determine whether disparities justify action and to design the appropriate equalizing formula (Ladd, 1999).

Recent research on using macro bases variables to determine equalization has been on Canada, although even there the RTS is still used to define the base. There are several reasons for this interest. First, Canada has a highly developed equalization system. The provinces have extensive tax powers, they differ significantly in the make-up of their tax bases, some provinces have large resources revenue, and average incomes differ significantly across provinces. These factors have led to a long concern with equalization, going back to the 1930s; resulting in a comprehensive RTS- based set of arrangements (Boothe and Hermanutz, 1999).



The entitlements calculated on the bases of the RTS and needs requirements determine not the actual amount of transfers, as in the Canadian system, but the “relativities”. The federal government sets an overall transfer amount, and these relativities are used to allocate the amount among the states. Like the Canadian system, the Australian system uses the RTS approach to calculate equalization entitlements, at least on the revenue side.

Variables other than state tax rates and bases do enter the formula, however in calculating needs. These calculations reflect costs and demand factors for each of expenditure components. The Australian system therefore broadens the information used in calculating equalization entitlements beyond the data used under the RTS, but it does not use macro variables of the type proposed in Canada, such as provincial GDP (Courchene, 1995).

The Australian system differs from the Canadian system in several ways. First, and most important, is the existence of the commonwealth grants commission. This commission acts as an arbiter between the states and the federal government and handles much of the administration and allocation of federal – state grants. The Australia system includes “needs” and “costs” differences in the formula, both determined by the commission. Second, relative to their expenditure responsibilities, states in Australia have smaller tax bases than do Canadian provinces. This results in all states facing fiscal gaps with the federal government and thus in the federal government transferring fund to all states full equalization occurs without any need to have richer states transfer directly to poorer states (Courchene, 1984).

South Africa's equalization system, the provincial Equitable sharing system, depends completely on needs, as provincial own-source revenues are small. Less than 3 percent of provincial expenditure is financed from own-source revenues. As with other needs-based approaches, transfers are determined by a variety of demographic and other variables. One component of these needs is calculated on the basis of a standard macro bases variable; the share national remuneration of employees earned by employees within the province. Changing this measure to provincial GDP has been proposed. The South African system is based on seven needs components, each weighted according to the component's importance in the past. The seven components are education (41 percent), health (19 percent), welfare (18 percent), a basic component (7 percent) an institutional component (5 percent), and a backlog component (3 percent). The needs requirements for each province for each component are calculated and summed to arrive at the provincial share of the grant. The provinces are then free to allocate their revenues, including these transfers, as they choose (Financial and Fiscal commission, 2004).

The method of equalization also differs across programs. Australia, Canada and Germany equalize per capita fiscal capacity using the representative tax system; Switzerland uses macro tax bases. It devotes 19 percent of equalization financing to cost equalization using eight factors; population size, area, population density, population older than 80, number of large cities, number of foreign adults resident for more than 10 years, unemployment, and number of people requesting social assistance from the Canton. In Germany actual rather than potential revenues are used in these calculations, as both actual and potential revenues are the same due to the uniformity of state tax bases and tax rates through

federal legislation. China uses potential revenues although they equal actual revenues when there is uniformity of tax bases and tax rates, as mandated by central government legislation in China (Boadway and Shah, 2007).

Serious concerns have been raised about the effectiveness of the intergovernmental transfer system in India, and studies have linked some of these problems to the way in which its legal architecture has evolved. The involvement of several agencies in the intergovernmental transfer system has been criticized as inefficient and wasteful. In a leading study of Indian fiscal federalism, Rao and Singh (2000) find “some evidence to support the hypothesis that states with greater political and economic influence or importance receive higher per capita transfers”. This has been facilitated by a reduction in the percentage of fiscal transfers determined based on objective factors in favour of increased discretion.

Khemani (2003) confirms that political bodies without constitutional authority, such as the planning commission, have a tendency to award funds based on political considerations (such as party affiliation of the state government’s ruling party or coalition). With respect to central ministry grants, Khemani (2003) finds that “national politicians indeed pursue disaggregated targeting of individual districts to serve particular political objectives”. Constitutional rules that determine intergovernmental transfers, it is concluded, to indeed make a difference.

Mitullah (2005), observed that resource allocation method for revenue, workforce and equipments for specific assignments provides local authorities with a decision model for matching assignments with available financial resources, in an optimal way. Local authorities play a critical role in the development process and public service delivery in Kenya, as observed by Mitullah (2005), in her research entitled “management of resources by local authorities: the case of local authority transfer fund in Kenya”.

## **2.4 Determinants of Revenue Allocation**

Designing horizontal revenue equalization and allocation is quite crucial. The first is the measure of the local governments’ financial capacity indicators. The second is the insertion of the individual local governments’ indicators into a suitable equalization formula. In practice, such an abundance of measures and formulas exist that technical explanations and comparisons of selected schemes require a huge analytical effort (Faber and Otter, 2003). Best practice analyses are not relevant, because each system is tailored to the needs and circumstances at the particular state organization under scrutiny and to national diversity.

Transfers are based on a measure of each jurisdiction’s potential revenue-raising capacity (such as assessed values for property taxes or measured tax bases for other taxes) and not on actual revenues. If revenue capacity is measured accurately, often not an easy task, such transfers or allocations will create no disincentive for local governments to raise revenues, because at the margin the local government still bears full fiscal responsibility

for expenditure and taxing decisions, essentially because transfers are lump sum (inframarginal) in nature (Smart, 1998).

Revenue-sharing systems are intended to provide independent revenue sources to subnational governments by minimizing tax disharmony and distortions. When the revenue share is distributed entirely on the basis of accrual, the system is meant merely to offset vertical fiscal imbalance. Such a system ensures fiscal autonomy to the extent that it provides an independent revenue source, retains its buoyancy over time if the ratio that is shared is not reduced, and minimizes distortions by avoiding tax competition (Shah, 1998).

Harmonizing policy is a common method used in revenue allocation. Policy harmonization can be relevant in three areas. First, harmonization of regional tax systems can be done in a way that does not relieve regions of accountability for choosing how much own-source revenue to raise. For example, tax base harmonization accompanied by a single tax-collecting administration would reduce collection and compliance costs while allowing regions to choose their own tax rates. This would be particularly helpful if the taxes in question were co-occupied by the federal government. Such harmonization would not eliminate the incentive to use tax rates as strategic policy instruments to compete for mobile factors of production or to export tax liabilities (Spahn, 2004).

Economic organization is an important determinant of revenue transfer and allocation. These typically involve fostering the principles of an economic distribution, namely, the

free flow of goods, services, labour and capital across regional boundaries. Federal grants share some common features. The standard principle guiding the design of equalization grants is that all regions should have the potential to provide roughly comparable levels of public services at comparable tax rates. Providing comparable levels of service diminishes sizable differences in net fiscal benefits across regions, which in turn reduces fiscal inefficiency (fiscally induced migration) and fiscal inequity (un-equal treatment of equals across regions).

These principles can be put into practice in various ways, depending on the extent of decentralization, the statistical sophistication of the government, and the tolerance of voters. In practice, three kinds of elements may be included in the determination of equalization entitlements of regions. The first revenue-raising capacity of regional governments, an important element in federations that are fairly decentralized. A standard approach to revenue equalization is the Representative Tax System (RTS), under which equalization entitlements of regions are based on the ability of a region to raise revenues using a standard regional tax system. For the case of revenue source  $i$ , the per capita equalization entitlement of region  $j$ , denoted,  $E_i^j$ , under full representative tax system treatment is

$$E_i^j = \bar{t}_i \left( \bar{B}_i - B_i^j \right)$$

Where  $\bar{t}_i$  is a standard tax rate for revenue source  $i$  (possibly the average rate used by the regions),  $B_i^j$  is region  $j$  per capita tax base for revenue source  $i$ , and  $\bar{B}_i$  is a standard

per capita tax base for equalization purposes (possibly the national average per capita tax base). Per capita entitlements are calculated for each region and for each revenue source and aggregated to give total per capita equalization entitlements for all regions. Some of these are positive and some negative (Courchene, 1995).

Since CRA formula is set on the last exchequer accounts but remitted in forward years it is expected that the actual allocated amount will be higher each year especially since the taxman's collections have been increasing (World Bank Report, 2011).

## **2.5 Summary**

The desirability of substituting a macro base for an RTS approach depends, at least partly, on the perceived purpose of equalization. The standard idea is that equalization serves to ensure horizontal equity, that like individuals are treated alike by the government regardless of where they live within a country. Most important is the straightforward link between the use of the RTS approach and the purpose of equalization.

Spahn (2004) suggests that rather than using the representative tax base to calculate transfers, some more "macro" measures, such as provincial per capita GNP, could, or should, be used. He further explores the arguments for and against this alternative approach and discusses what the best basis to use in calculating equalization transfer might be. Spahn (2004) again examines whether the Representative Tax System (RTS) or macro bases better satisfies the theoretical justifications for equalization systems and

whether, even if the RTS is theoretically better, a macro system could approximate the system in a simpler and less costly manner.

It is important to examine the different types of intergovernmental transfers to be clear about what equalization is meant, and not meant to do. Equalization is not meant to deal with vertical equity, the transfer from rich to poor individuals (Broadway, 2002). It is meant to ensure horizontal equity, the principle that like individuals are treated equally by the governments wherever they live. Therefore this study seeks to find out the comparison between representative tax system and macro basis for equalizations systems.

Tax sharing is an important instrument of intergovernmental transfer to harmonize the tax system and ensure the stability and autonomy of subnational fiscal policy. The simplest form of tax sharing is to piggyback on central taxes, such as individual Income tax, or allow the subnational government to levy a surcharge on central taxes. This method should be used only for destination- based taxes. If origin-based taxes, such as corporate income tax, are shared, complex formulas must be used to distribute revenues, because distribution on the basis of collection could result in significant spillover of taxes across subnational jurisdictions.

Some countries use tax sharing as a substitute for unconditional grants. Doing so provides a stable and certain source of revenue to subnational governments, and it has built-in buoyancy. However, when taxes are shared not merely to offset vertical fiscal imbalance but also as a substitute for equalizing grants, formulas have to be used that include



revenue and cost disabilities. In such cases, it is important to ensure that the formula is simple and transparent and has the right incentives. Tax devolution with an equalizing formula is less targeted than unconditional grants designed to offset revenue and cost disabilities.

Wide differences are apparent in tax-sharing systems around the world. Tax-sharing systems adopted in particular countries tend to depart from the ideal because of the historical, institutional, and political factors that helped create these systems. Even when the perverse incentives created by prevailing systems are recognized, systems are difficult to change. Nevertheless, identifying a system's shortcomings and attempting to build consensus to change the system can help reduce disincentives and distortions.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

This chapter presents discussions that form the research methodology for this study. It starts with 3.2 which gives the theoretical literature of the study, 3.3 gives the target population, 3.4 provides instruments used for data collection, 3.5 explains the data analysis models, and finally 3.6 describes the data validity and reliability.

#### **3.2 Research Design**

This study adopts the descriptive design and a census method was used. Descriptive design is useful to measure the characteristics of a particular population, either at a fixed point in time, or comparatively over time (Gay, 2004). The design is considered appropriate for the study because according to Kothari (2003) the descriptive design is concerned with describing, recording, analyzing, and reporting conditions that exist or existed. A census on the other hand is the procedure of systematically acquiring and recording information about the members or items of a given population. This design will give the researcher a comprehensive picture of the variable relationship since the method is the only means of accurately measuring and giving statistical inferences.

#### **3.3 Target Population**

Population is the entire group of individuals, events or objects having common characteristics (Mugenda and Mugenda, 1999). Cooper and Schindler, (2006) call it a

population of interest from which the individual participants or object from which the measurement is taken. The target population for this study entails all the 142 local authorities in Kenya which have been in existent for the last 10 years.

### **3.4 Instruments for Data Collection**

This study use secondary data which entail last 10 years' data derived from the records of the financial records of the local authorities in Kenya.

Secondary data on the other hand be important in getting the relationship between the dependent and the independent variables.

### **3.5 Data Analysis**

#### **3.5.1 Conceptual Models**

Inferential analysis be used to reach conclusions that extend beyond the primary data alone. In the past Kenya has been using representative tax system for equalization systems among the local authorities. To analyze the comparison between representative tax system and macro basis for equalization systems in Kenya, the researcher use the data on revenue allocation among the local authorities in Kenya for the last 10 years then apply the new macro bases model given below to establish what might have happened during the period if the macro bases model was used.

$$\mathbf{RA} = f(\mathbf{POP}, \mathbf{EQS}, \mathbf{POV}, \mathbf{AREA}, \mathbf{FISD})$$

**Where:**

**RA** is Revenue Allocation. It is the dependent variable measured by the amount of money allocated to a various local authority.

**POP** is the Population. This is one of our explanatory variables measured by the number of people giving the total population for an area covered by a particular local authority.

**EQS** is the equal share. This is one of our explanatory variables measured by the amount of money allocated to each authority on an equal basis.

**AREA** is Land Area: This is one of our explanatory variables measuring the area within the jurisdiction of a particular local authority in KM<sup>2</sup>.

**FISD** is the Fiscal Discipline. This is one of our explanatory variables measuring how the different local authorities have behaved in spending the allocated money. It be measured by awarding scores (between 0 and 1) based on whether the authority has utilized all the revenue allocated, whether the authority has appropriated the money well and whether the authority has been innovative in using the money to generate other resources.

**POV** is the poverty level. This is one of our explanatory variables measured by allocation of resources according to poverty levels to each local authority.

RA = f (levies remitted to the authority)

The current CRA formula is based on the 2010/2011 accounts of Kshs 203 billion of government revenue in which population revenue takes up Kshs 91 billion, equal share Kshs 51 billion and poverty levels Kshs 41 billion. Land area has been allocated Kshs 16 billion and fiscal responsibility Kshs 4 billion (World Bank Report, 2011).

### 3.5.2 Empirical Models

The models are given as:

$$RA = \beta_0 + \beta_1 POP + \beta_2 EQS + \beta_3 POV + \beta_4 AREA + \beta_5 FISD + \epsilon \dots\dots\dots (1)$$

$$RA = \beta_0 + \beta_1 X_1 + \epsilon \dots\dots\dots (2)$$

The regressive model presented by Equation (i) has revenue allocation as the dependent variable which is influenced by the size of the population, equal share allocated to each local authority, the poverty level estimate within the jurisdiction of the authority, the local authority geographical coverage as well as fiscal discipline in appropriation of the fund to the intended use. This is one of our explanatory variables measured by the amount of money allocated to each authority on an equal basis. The strength of the relationship between the dependent variable and the independent variable(s) be determined by getting the Pearson's Correlation. T-test be of much significance.

### 3.6 Data Validity and Reliability

Validity is defined as the accuracy and meaningfulness of inferences which are based on the research results (Mugenda and Mugenda, 2003). According to Kothari (2004), it is the degree to which a test measures what it purports to measure. The research data be pre-tested for 5 local authorities randomly selected from the population. Reliability is a measure of the degree to which a research instrument yields constant results or data after repeated trials (Borg and Gall, 1999). A split half technique be used at piloting to determine the reliability of the secondary data source.

Split half technique involves splitting the statement of the test into two halves (odd and even items), then calculating the Pearson's correlation coefficient between the two halves of the test. Reliability of an instrument is strong when the coefficient is close to 1, while the instrument is unreliable if the co-efficient is close to 0. A coefficient of above 0.5 was deemed appropriate.

## **CHAPTER FOUR**

### **DATA ANALYSIS, FINDINGS AND DISCUSSION**

#### **4.1 Introduction**

This chapter presents the presentation and interpretation of the analyzed data. It starts with 4.2 which give the summary statistics of the research, 4.3 which explain the findings on comparison between RTS and macro basis, 4.4 gives the regression analysis results, 4.5 provides the discussions of the results and finally 4.6 gives the summary of the findings.

#### **4.2 Summary Statistics**

##### **4.2.1 Macro Basis**

Table 4.1 illustrates the regression coefficients for the explanatory variables. The significant level was 5% implying that, the higher the significant level for an explanatory variable, the lower the confidence level and thus the less the variable explains changes in the dependent variable. Results indicate that, population is the only explanatory variable explaining changes in equalization transfers significantly (gives confidence level greater than 95% as opposed to other explanatory variables).

The researcher considered five variables to be significantly influencing funds allocated to local authorities which included the organization poverty level, equal share, land area, fiscal discipline and population. The study revealed that the most prevalent factor among the five mentioned was population with beta value of 0.64 while land area, equal share,

poverty level and fiscal discipline had beta value of 0.10, 0.09, 0.07 and 0.01 respectively.

The model can then be generated as follows:-

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \epsilon$$

$$Y = 12,742,544 + 0.07X_1 + 0.09X_2 + 0.10X_3 + 0.01X_4 + 0.64X_5 + \epsilon$$

**Table 4.1: Coefficients for macro basis**

Model	Un-standardized coefficients		Standardized coefficients	t	Sig	Correlations			Collinearity statistics
	B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance
(Constant)	12,742,544	0.41		1.75	0.002				
Poverty level	0.07	0.09	0.47	0.78	0.001	0.37	0.11	0.07	0.79
Equal share	0.07	0.10	0.59	0.77	0.000	0.52	0.10	0.06	0.57
Land area	0.09	0.10	0.60	0.86	0.001	0.56	0.12	0.07	0.53
Fiscal discipline	0.01	0.09	0.31	0.07	0.003	0.51	0.01	0.01	0.55
Population	0.56	0.10	0.64	5.48	0.000	0.77	0.60	0.46	0.52

From the model, the constant value of 12,742,544 implies that the level of funds allocated to local authorities will be Kshs12, 742,544 when coefficients for all variable factors are zero. The results also indicate that a change in one unit of poverty level will lead to a 7% change in funds allocated to local authorities in the same direction.

At the same time, change in equal share, land area, fiscal discipline and population by 1 unit in each, will result to a positive change in funds allocated to local authorities by 9%, 10%, 1% and 64% respectively. This is an indication that the five independent variables



under investigation were positively related to the dependent variable (funds allocated to local authorities). Given that, The CRA identified a number of parameters that were used in the development of the recently released formula including population size (60%), poverty index (12%), land area (6%), basic share (20%) and fiscal discipline (2%). The population and poverty parameters were selected due to the fact that the costs of services in any given area depend on the population size and that poverty threatens every poor Kenyan irrespective of their location. The land parameter is based on the fact that the cost of service delivery depends on the size of a county and the formula proposes to allocate an equal amount to each square Kilometer of land. The study therefore affirms population as the most significant factor in considering revenue allocation to county governments.

#### 4.2.2 Representative Tax System (RTS) Basis

Given that total revenue allocated to the local authority is a function of the amount of tax collected by the authority, the regression model can be derived as follows:

**Table 4.2: Coefficients for RTS**

Model	Un-standardized coefficients		Standardized coefficients	t	Sig	95% confidence interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	9,354,823	0.21		1.15	0.000	(0.19)	1.24
Levy submitted to the local authority	0.15	0.11	0.06	0.87	0.003	(0.21)	0.33

Given the findings, the statistical model for RTS can be derived as:

$$\begin{aligned} \text{Therefore: } Y &= \beta_0 + \beta_1 X_1 + \epsilon \\ : Y &= 9,354,823 + 0.11X_1 + \epsilon \end{aligned}$$

This implies that when the amount of levies remitted to the local authority is zero, the equalization revenue amounts to Kshs.9,354,823. At the same time, a change in one unit of levies/tax to the local authority will lead to change in equalization amount by 0.11 as presented in Table 4.2.

### **4.3 Comparison between RTS and Macro Basis**

To determine the level of significance of the different explanatory variables, the researcher considered the t value(s) as well as the  $R^2$  at both bi-variant and multivariate analysis level. Table 4.3 illustrates the multivariate t value for macro basis while table 4.4 shows the significant level for the macro basis indicates both the t value and  $R^2$  for each explanatory variable analyzed as a single variant.

#### **4.3.1 Model Fitness**

Adjusted  $R^2$  is called the coefficient of determination and tells us the proportion of the change in Funds allocated to local authorities that is caused by the change in explanatory variables.

**Table 4.3: Model Fitness for Macro Basis**

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	0.79	0.62	0.587	0.39	0.62	17.80	5	54	0.000
Predictors: (Constant), Population, Poverty level, Equal share, Fiscal discipline, Land area									

Table 4.3 reveals that explanatory variables used in this study explained 62% of any change in the dependent variable (funds allocated to local authorities) as indicated by  $R^2$ .

**Table 4.4: Model fitness for RTS**

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.54	0.29	0.272	0.42
Predictors: (Constant), Levies remitted to the authority				

Findings indicate a significant F value of 17.80 while the critical value for F at 5% significant level was found to be 2.56. This implies that the set of explanatory variable, which included population, poverty level, equal share, fiscal discipline and land area, significantly explained changes in the dependent variable (that is, funds allocated to local authorities). At the same time, the significant level was less than 0.05 (5%) an indication that the confidence level for the F statistics was above 95% as illustrate by Table 4.4.

### 4.3.2 Correlation Analysis

**Table 4.5: Pearson’s Correlation**

CORRELATIONS							
		Funds allocated to local authorities	Poverty level	Equal share	Land area	Fiscal discipline	Population
Pearson Correlation	Funds allocated to local authorities	1.00	0.37	0.52	0.56	0.51	0.77
	Poverty level	0.37	1.00	0.37	0.40	0.37	0.35
	Equal share	0.52	0.37	1.00	0.55	0.54	0.55
	Land area	0.56	0.40	0.55	1.00	0.56	0.59
	Fiscal discipline	0.51	0.37	0.54	0.56	1.00	0.59
	Population	0.77	0.35	0.55	0.59	0.59	1.00
Sig. (1-tailed)	Funds allocated to local authorities	1.00	0.00	0.00	0.00	0.00	0.00
	Poverty level	0.00	1.00	0.00	0.00	0.00	0.00
	Equal share	0.00	0.00	1.00	0.00	0.00	0.00
	Land area	0.00	0.00	0.00	1.00	0.00	0.00
	Fiscal discipline	0.00	0.00	0.00	0.00	1.00	0.00
	Population	0.00	0.00	0.00	0.00	0.00	1.00

To determine the degree of relationship between the explanatory variables, the researcher performed a Pearson’s correlation as illustrated by Table 4.5. Pearson's correlation coefficient ( $r$ ) is a measure of the strength of the association between the two variables. This enabled the researcher to establish the level to which one variable moved together with the other in explaining changes in funds allocated to local authorities. Findings indicate that, the relationship between all the variables (that is, poverty level, equal share, land area, fiscal discipline, and population as well as funds allocated to local authorities) with each other is significant since the significance level at 95% confidence level; one tail test is less than 0.05.

### 4.3.3 Analysis of Variance Results

**Table 4.6: Analysis of variance (ANOVA)**

ANOVA(b)						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	13.96	5	2.79	17.80	0.00
	Residual	8.47	54	0.16		
	Total	22.44	59			
A	Predictors: (Constant), Population, Poverty level, Equal share, Fiscal discipline, Land area					
B	Dependent Variable: Funds allocated to local authorities					

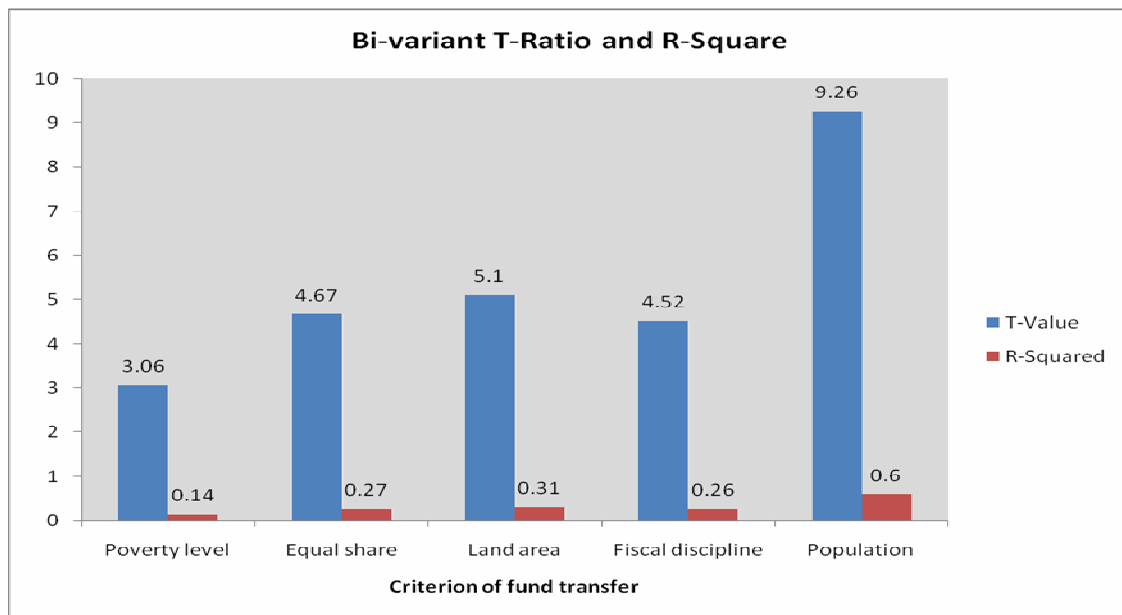
Findings indicate a significant F value of 17.80 while the critical value for F at 5% significant level was found to be 2.56. This implies that the set of explanatory variable, which included population, poverty level, equal share, fiscal discipline and land area, significantly explained changes in the dependent variable (that is, funds allocated to local authorities). At the same time, the significant level was less than 0.05 (5%) an indication that the confidence level for the F statistics was above 95% as illustrate by Table 4.4.

#### 4.4 Regression Analysis Results

**Table 4.7: Bi-variant T-Ratio and R-Square**

	<b>T-Value</b>	<b>R-Squared</b>
Poverty level	3.06	0.14
Equal share	4.67	0.27
Land area	5.10	0.31
Fiscal discipline	4.52	0.26
Population	9.26	0.60

**Figure 4.1: Bi-variant T-Ratio and R-Square**



From Table 4.3, the value of R square was found to be 0.62 indicating that poverty level, equal share, land area, fiscal discipline and population explained 62% of any change in funds allocated to local authorities. The remaining 38% could be explained by other factors affecting funds allocated to local authorities. The study, nonetheless, revealed that

Population carried the highest weight in explaining factors that affect funds allocated to local authorities with an index of 60%. Other factors which included land area, equal share, fiscal discipline and poverty level had explanation weight of 31%, 27%, 26% and 14% respectively as shown in Table 4.7.

#### **4.5 Discussion of Results**

Highest correlation was found between population and funds allocated to local authorities with coefficient factor of 0.77. Others were population and equal share, funds allocated to local authorities and land area, population and land area as well as population and fiscal discipline with each a correlation coefficient of 0.55, 0.56, 0.59, 0.59 respectively. Land area and equal share were also found to be correlating highly with correlation coefficient of 0.55 while fiscal discipline were also found to be correlating highly with land area (0.56). Least correlation was identified between population and poverty level (0.35).

RTS model as presented in Table 4.4, the R square is 0.29 which is far much lower than that of macro (62%). This implies that Tax explains only 29% for any change in equalization amount. The remaining 71% is explained by other factors not explained in the model. This further indicates that the macro basis of revenue equalization is superior to the RTS basis given that, the equalization amount is captured and explained several factors as opposed to only one factor (tax). The results are consistent with Spahn (2004) suggestion that rather than using the representative tax base to calculate transfers, some more “macro” measures, such as provincial per capita GNP, could, or should, be used. He further explores the arguments for and against this alternative approach and discusses

what the best basis to use in calculating equalization transfer might be. Spahn (2004) again examines whether the Representative Tax System (RTS) or macro bases better satisfies the theoretical justifications for equalization systems and whether, even if the RTS is theoretically better, a macro system could approximate the system in a simpler and less costly manner. The study further indicates that, harmonizing policy is a common method used in revenue allocation. Policy harmonization can be relevant in three areas.

First, harmonization of regional tax systems can be done in a way that does not relieve regions of accountability for choosing how much own-source revenue to raise. For example, tax base harmonization accompanied by a single tax-collecting administration would reduce collection and compliance costs while allowing regions to choose their own tax rates. This would be particularly helpful if the taxes in question were co-occupied by the federal government. Such harmonization would not eliminate the incentive to use tax rates as strategic policy instruments to compete for mobile factors of production or to export tax liabilities.

## **4.6 Summary**

This chapter presented the data analysis, findings and interpretation. The models presented entailed comparison of the relationship between the revenue equalization and both the macro and RTS variables. With a coefficient of determination of 62%, the macro basis of revenue equalization stood superior to the RTS basis, which only explains 29% of the revenue allocation through equalization model.



## CHAPTER FIVE

### SUMMARY AND CONCLUSIONS

#### 5.1 Introduction

This chapter presents the conclusions and recommendations of the study. It starts with 5.2 which give the summary of the study, 5.3 which gives the conclusions of the study made by the researcher, 5.4 explain the limitations of the study, and finally 5.5 which gives the recommendations to users of the research findings and for further research.

#### 5.2 Summary of the Study

From the model, the constant value of 12,742,544 implies that the level of funds allocated to local authorities will be Kshs12, 742,544 when coefficients for all variable factors are zero. The results also indicate that a change in one unit of poverty level will lead to a 7% change in funds allocated to local authorities in the same direction. At the same time, change in equal share, land area, fiscal discipline and population by 1 unit in each, will result to a positive change in funds allocated to local authorities by 9%, 10%, 1% and 64% respectively. This is an indication that the five independent variables under investigation were positively related to the dependent variable (funds allocated to local authorities).

Given that, The CRA identified a number of parameters that were used in the development of the recently released formula including population size (60%), poverty index (12%), land area (6%), basic share (20%) and fiscal discipline (2%). For the RTS,

that when the amount of levies remitted to the local authority is zero, the equalization revenue amounts to Kshs.9, 354,823. At the same time, a change in one unit of levies/tax to the local authority will lead to change in equalization amount by 0.11. For RTS model the R square is 0.29 which is far much lower than that of macro (62%). This implies that Tax explains only 29% for any change in equalization amount. The remaining 71% is explained by other factors not explained in the model. This further indicates that the macro basis of revenue equalization is superior to the RTS basis given that, the equalization amount is captured and explained several factors as opposed to only one factor (tax).

### **5.3 Conclusions**

The study reveals that, for equalization transfers to county government, population within a particular county is the main consideration given that, the higher the population, the more the cost of maintenance of infrastructure given the latter's rate of usage. To a larger extent, higher population within a county will also be positively related to the land area. Given the large jurisdiction of the county governments as compared to the local authorities the minimum amount allocated to each County will be far much higher than Kshs 12,742,544 (amount meant for local authorities). While the guaranteed and unconditional transfer of 15% of national revenue for county governments is only a minimum, it remains to be seen if it will be adequate given that county governments will perform both decentralized government and typical local government functions.

Fiscal discipline was identified as a parameter that would build financial performance incentive mechanisms that would ensure proper financial management and the exploitation of revenue potential. However, as much as the formula outlines and addresses fundamental issues, it has been widely criticized for failing to factor in a number of considerations. For instance the formula does not factor in urbanization. The fact that the Urban Areas and Cities Act 2011 provides for the classification of towns and municipalities implies that such areas will need special attention to ensure that they become vibrant economic hubs. Civil Society Organizations such as The Institute for Social Accountability have also raised a number of critical issues for instance the lack of justification and supporting facts and data which makes it difficult to determine if the proposed formula will support the realization of Article 43 and 203 of the Constitution.

The commission has also been criticized for putting too much weight (60%) on the population parameter of which data will be obtained from the Kenya National Bureau of Statistics (KNBS). Law makers have also threatened to move amendments in parliament to re-define the parameters used by the CRA when the proposals are debated in Parliament. The legislators have cautioned that the parameter based on population threatens to increasingly marginalize the already marginalized regions and have called for its reduction and instead an increase in the equal share and poverty level parameters.

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

The researcher faced the challenge of time as collecting data from the local authorities was constraint. The researcher however, prepared an effective action plan that ensured

proper time management. At the same time, getting financial data from the local authority posed a limitation in that, the target respondents feared disclosing what they termed as confidential information to other parties. This was countered by assuring confidentiality and the intended purpose of the study.

## **5.5 Recommendations for Further Research**

Given the findings the researcher recommends the following to the policy makers and other stakeholders. While due regard must be given to existing local conditions in Kenya, there is need for accurate assessment of revenue needs for county governments in the new constitutional order to make certain that county governments meet the broad objectives of devolved government. In addition, Effective devolution and revenue allocation can only be enhanced where there is public participation in decision making at the county level. The 15 percent derivation quota should be tried and be seen to work.

However, the new thinking in Kenya, as evidenced by the disagreements over CRA's proposed formula, is that even if revenue allocation is tinkered with to favour the resource-rich counties, the pervasive tradition of kleptocratic political leadership shall not eventually make proper sense of county resources. Integrative mechanisms should be adopted by CRA to ensure reduced or minimal squabbles over the formula, and get to practical ways of equitable revenue allocation. There should also be efficient and effective systems measuring poverty level and processes in place to maintain focus on the mission.

This would ensure the poverty level in a county is also significantly considered during transfer of fund to county governments. Moreover, transparency should be evident in the county revenue allocation commensurate to the agreed equalization ratio and scheme of transfer of funds to county governments. Key recommendations of this study are that, further studies should be undertaken on comparison on the representative tax system and macro basis of revenue allocation to the different counties in Kenya. Further research should be conducted locally in order to establish the impact of the revenue allocation formula in the different counties of the country. This assesses the effectiveness of the adopted formula in the revenue allocation.

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## **APPENDIX I: LIST OF LOCAL AUTHORITIES IN KENYA**

1. Baringo County Council
2. Bondo County Council
3. Bungoma County Council
4. Bungoma Municipal Council
5. Bureti County Council
6. Burnt Forest Urban Council
7. Busia County Council
8. Busia Municipal Council
9. Butere/Mumia County Council
10. Chogoria Town Council
11. City Council of Nairobi
12. County Council of Bungoma
13. County Council of Homa Bay
14. County Council of Taita Taveta
15. Eldama Ravine Town Council
16. Eldoret Municipal Council
17. Embu Municipal Council
18. Garissa County Council
19. Garissa Municipal Council
20. Garrisa Town Council
21. Gusii County Council
22. Homa Bay Municipal Council
23. Isiolo County Council
24. Iten Town Council
25. Kabarnet Municipal Council
26. Kajiado Town Council
27. Kakamega County
28. Kandara Town Council
29. Kangundo Town Council
30. Kapenguria Municipal
31. Kapsabet Municipal
32. Karatina Municipal
33. Karuri Town Council
34. Keiyo County Council
35. Kericho Municipal Council
36. Kerogoya/Kutus Municipal Council
37. Keroka Town Council
38. Kerugoya/Kutus Town Council
39. Kiambu County Council
40. Kiambu Municipal Council
41. Kikuyu Town Council
42. Kilifi County Council
43. Kilifi Town Council
44. Kimilili Municipal Council

45. Kipkelion Town Council
46. Kipsigis County Council
47. Kirinyaga County Council
48. Kisii Municipal Council
49. Kisumu Municipal Council
50. Kisumu County Council
51. Kitale Municipal Council
52. Kitui Municipal Council
53. Koibatek County Council
54. Kwale County Council
55. Kwale Urban Council
56. Laikipia County Council
57. Lamu County Council
58. Limuru Municipal Council
59. Local Authorities Pension Trust
60. Local Authorities Provident Fund
61. Londiani Town Council
62. Luanda Town Council
63. Machakos Municipal Council
64. Makueni County Council
65. Makuyu Town Council
66. Malaba Town Council
67. Malindi County Council
68. Malindi Municipal Council
69. Maragua County Council
70. Maragua Town Council
71. Maralal Town Council
72. Mariakani Town Council
73. Masaku County Council
74. Maua Municipal Council
75. Mavoko Municipal Council
76. Mbeere County Council
77. Mbita Point Town Council
78. Meru (Nkubu) County Council
79. Meru County Council
80. Meru Municipal Council
81. Meru South County Council
82. Migori Municipal Council
83. Migori Town Council
84. Molo Town Council
85. Mombasa City Council
86. Mombasa Municipal Council
87. Muhoroni Town Council
88. Mumias Municipal Council
89. Municipal Council of Limuru
90. Municipal Council of Maua

91. Municipal Council of Naivasha
92. Municipal Council of Thika
93. Murang'a County Council
94. Murang'a Municipal Council
95. Mwingi County Council
96. Mwingi Town Council
97. Nairobi City Council
98. Naivasha Municipal Council
99. Naivasha Town Council
100. Nakuru County Council
101. Nakuru Municipal Council
102. Nandi County Council
103. Nandi Hills Town Hill
104. Nanyuki Municipal Council
105. Narok County Council
106. Narok Town Council
107. Nyahururu Municipal Council
108. Nyambene County Council
109. Nyamira County Council
110. Nyandarua County Council
111. Nyando County Council
112. Nyeri County Council
113. Nyeri Municipal Council
114. Nzoia County Council
115. Olkejuado County Council
116. Othaya Town Council
117. Oyugis Town Council
118. Pokot County Council
119. Rachuonyo County Council
120. Ruiru Municipal Council
121. Rumuruti Town Council
122. Runyenjes Municipal Council
123. Samburu County Council
124. Siaya County Council
125. Siaya Municipal Council
126. Sotik Town Council
127. Tana River County Council
128. Taveta Town Council
129. Thika County Council
130. Thika Municipal Council
131. Town Council of Kangema
132. Town Council of Kikuyu
133. Tramsara County Council
134. Turkana County Council
135. Ugunja Town Council
136. Vihiga County Council

137. Vihiga Municipal Council

141. Webuye Municipal Council

138. Voi Municipal Council

142. Yala Town Council

139. Wajir County Council

140. Wareng County Council

**Source:** Ministry of Local Government Management Information System Database

(2012)