# AN ASSESSMENT OF THE INFLUENCE OF CAPITAL BUDGETING PRACTICES ON THE OPERATION OF PROJECTS INITIATED BY LOCAL AUTHORITIES: A SURVEY STUDY OF PROJECTS IN KISII MUNICIPAL COUNCIL, KENYA

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A Research Project Submitted to the Graduate School in Partial Fulfilment of the requirement for the award of Master of Business Administration Degree, Faculty of Commerce, Kisii University College.
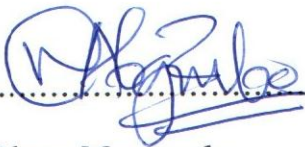
**EGERTON UNIVERSITY**

**MARCH, 2011.**

# DECLARATION AND RECOMMENDATION

## DECLARATION

This Research Project is my original work and has not been presented to any other examining body in a College or University.

Sign ........................................Date... 28/03/2011

Vitalis Abuga Mogwambo

## RECOMMENDATION

This Research Project has been submitted for examination with our approval as the University supervisor(s)

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## DEDICATION

This Research Project is dedicated to wife Grace Kemunto Abuga, my son Einstein Omambia, and my parents: David Mogwambo and Rose Bosibori, my siblings: Selina, Mary, Gesare, Cosmas, the late Ronald Maina and Joash for their moral support that was required for my effective learning.

# ACKNOWLEDGEMENT

# ABSTRACT

Capital budgeting practices involves decisions on investments; it entails the techniques that seek to build on the concepts of the future value of the capital investments. Poor and unrealistic capital budgeting practices can cause misery on socio-economic development. It was not clear to what extent local authorities had embraced these practices. The purpose of this study was to assess the influence of Capital Budgeting Practices on the operation of projects initiated by Local Authorities in Kenya. The specific objectives included: assessing the extent of use of the Capital Budgeting Practices and its influence on the operation of projects initiated by the Local Authorities. The study was guided by the Capital Budgeting theory that addresses the independent variables: NPV, IRR, PI, ARR and PBP. The research adopted a survey study design. The target population was 106 consisting of: 59 council representatives, 16 religious organization representatives and 31organized groups (or unions) representatives. The study sample was 52 respondents consisting of: 29 council representatives, 8 religious organization and 15 organized groups respondents. Stratified random sampling technique was applied to select a sample for this study. A structured questionnaire was used for primary data collection. Quantitative data collected was analyzed using descriptive and inferential statistics. Simple regression analysis and Pearson's correlation coefficient were used to assess the dependence of the variables at a 95% confidence level. The research findings include: participatory capital budgeting process enhanced accountability and financial transparency for projects, the consultative action and right choice of projects leads to good service delivery, profitability index was the major practice used to appraise projects, profitability index practice was the most frequently in project appraisal; capital budgeting practices do influence the operation of projects; PI approved the highest number of projects and had the greatest number of projects in operation. The regression equation parameters a and b were calculated and the regression equation established was $y_i = 216.2326203 + -2.914438503x_i$. The degree of association between the projects initiated and the revenue collected by the local authorities is negatively strong; the correlation coefficient is $r = -0.827319414$, this indicated that not all projects initiated can generate revenue, some projects were initiated to provide service to the general public.

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# LIST OF ABBREVIATIONS AND ACRONYMS

ARR- Average Rate of Return

CDP-Council's Development Plan

DDP -District Development Plan

GFSM- Government Finance Statistics Manual

IMF- International Monetary Fund

IPRSP- Interim Poverty Reduction Strategy Paper

IRR- Internal Rate of Return

KLGRP -Kenya Local Government Reform Programme

LASDAP- Local Authority Delivery action Plan

LATF-Local Authority Transfer Fund

MTEF- Medium Term Expenditure Framework

NPV- Net Present Value

PRSP-Poverty Reduction Strategy Paper

PIP- Public Investment Programme

PI- Profitability Index

UNSNA- United Nation's System of National Accounts

# CHAPTER ONE
# INTRODUCTION

## 1.1 Background to the Study

The local government system in Kenya comprises the Ministry of Local Government and the Local Authorities (LA). The origin of the local government is traced to 1902 when Kenya was still under the British rule. The mandate, management and operations of the local authorities are stipulated under the local Government Act Cap 265 of the laws of Kenya which was enacted in 1977 and is still in place today, with various amendments over the years. Kenya currently has 175 local authorities comprising of 3 cities (Nairobi, Mombasa and Kisumu), 42 Municipalities, 63 town councils and 67 county councils Republic of Kenya, Ministry of Local Government report (2009).

The political ladder in a Local Authority is the Mayor for City and Municipalities or Chairman for Town Councils and Counties, who is elected by councilors from among themselves. The mayor and councilors form the council, which is the policy making organ. The local authorities in Kenya operate under a committee system that deliberates on policies which the executive is expected to implement. All the departments are linked to appropriate council committees which deliberate on issues before they are taken to the full council for endorsement. The local authorities in Kenya are semiautonomous legal entities with administrative and legal powers delegated by the central government under the Local Government act. Overall the Ministry of Local Government is responsible for ensuring that local authorities have the institutional and policy framework, systems and capacity to effectively provide the required services in a responsive, efficient, accountable and transparent manner, Republic of Kenya, Ministry of Local Government report (2009).

The broad objectives of local government in Kenya are: to provide basic social infrastructural services within their areas of jurisdiction, promote local economic development in line with national development goals, to be instruments for enhancing local governance. In fact, a fully devolved local government system has the twin broad objectives of creating a better place for all to live in and creating sustainable, equitable, and environmentally sound development. These objectives translate into political, economic, financial, environmental, social and institutional responsibilities, Local Government Reforms in Kenya (2006). The Political objects

of local government are to achieve legitimacy or recognition for democratic devolved government, to ensure a political mandate for Private Sector Participation and to represent constituency interests. The economic objects are to improve efficiency, to promote cost effectiveness, to ensure economic sustainability and to generate economic growth. Likewise the financial objects are the promotion of capital investment, enhancement of cost recovery and the promotion of private investment. The environmental responsibilities are to improve availability of quality and reliable of services, to expand service coverage in poor areas and to ensure environmental sustainability.

The Social responsibilities of local government are diverse and cater largely for the poor and vulnerable groups. They include improving the well being of the poor, empowering the poor and promoting choice, improving health, security and safety, targeting vulnerable groups and ensuring gender equality, improving equality in service provision, ensuring job and income security, enhancing opportunity for sustainable poverty reduction and ensuring affordability, Local Government Reforms in Kenya (2006). Institute of Economic Affairs (2005), the Institutional responsibilities are organizational and managerial in nature and include skills improvement, access to new technologies, delegation of management to skilled people or organizations, and institutionalizing better management practices. Hence the council's mandate is to provide community services such as infrastructure, conservancy and fire brigade; social development services such as education, health and social services; economic development services such as licensing, public markets and bus parks; democratic governance; and internal common services. Achieving legitimacy or recognition for democratic devolved government is a key political responsibility of the council.

In Kenya, local authorities have evolved into important governance and development agencies. Operating under the Local Government Act, Chapter 265 of the Laws of Kenya, they serve several functions, the primary function of which is to mobilize resources and provision of services within their areas of jurisdiction. The policy documents like the Poverty Reduction Strategy Paper (PRSP, 2001) and the 9th National Development Plan, as well as the current Kenya Economic Recovery Strategy for Wealth and Employment Creation (2003-2007) stress the need to accelerate the Local Government reform process in order to further improve local

service delivery, governance and poverty alleviation. The main objective of the PRSP is to link and harmonize policy, planning and budgeting to ensure that implementation takes into account resource availability and constraints, and the expected outcome in terms of service delivery. The PRSP identifies the Medium Term Expenditure Framework (MTEF) as a mechanism that provides budgetary allocations to specific measures aimed at reducing poverty levels in the country. To facilitate Local Authorities to provide the services and facilities the government established the Local Authorities Transfer Fund (LATF) through an Act of Parliament, The Local Authorities Transfer Fund Act (No.8 of 1998).

LATF is currently pegged at 5% of the national income tax collected in a financial year and accounts for about 25 % of total local revenues. Local authorities access LATF funds based on the relative population of the local authority as well as certain performance conditions such as the timely preparation of budgets, financial reports including the abstracts of accounts, and preparation of a participatory services delivery action plan by the Local Authorities Service Delivery Action Plan (LASDAP) that prioritizes projects according to community needs. Local Authority Service Delivery Action Plan (LASDAP) was introduced in all Local Authorities in 2002 with the intention of putting in place a participatory planning system, which would directly engage the citizenry in planning, implementing and monitoring service delivery projects in their communities through council funding. It was hoped that Local Authority capital projects would meet the needs and priorities of the beneficiaries and cause available resources to be refocused away from administrative priorities to service delivery needs and the least advantaged sections of the community.

The budgeting process is designed to ensure harmonized financing of growth and poverty reduction efforts that are key for sustained fiscal discipline. The objective of the Interim Poverty Reduction Strategy Paper (IPRSP, 2001), is to improve economic governance and service delivery through the Local Government in which the municipalities are key in the implementation of projects for quality service delivery to the business community. Specific strategies include: to operationalise the LATF, improve financial management and revenue mobilization, and strengthen participatory planning, establish financial management control and rationalization of local authorities legal and management framework. The decline in the

performance and services delivery by the local governments would significantly contribute to poor quality of life particularly in Kenya's urban centers and this would mean poor use of capital budgeting practices. The Local Authorities Transfer Fund (LATF) was established through the LATF Act 1998 to enable Local Authorities to supplement the financing of the services and facilities they are required to provide under the Local Government Act. Through the LATF, disbursements are made directly to Local Authorities for use in improving service delivery to the public, improving financial management and accountability, and resolving outstanding debts. The LATF is a block grant that can be used at the discretion of the recipient Local Authority to meet the objectives of the Fund, within certain parameters and conditionality. It strengthens the ability of Local Authorities to play a pivotal role in the fight against poverty.

The Local Authorities combine the LATF receipts with their own local revenues to implement those services and investments most needed at the local level. Success depends on the ability of the local authorities to effectively mobilize their citizens to identify priority needs, implement the projects and services, and monitor the use of the funds. Local Authority has discretion over the use of the funds allocated, within national policies, and for the funding locally planned initiatives. The funds are not required to be completely free of conditions. The Central Government may impose broad conditions so as to ensure that national policies are followed. Transfers are a mechanism for encouraging improved performance by the recipients so that greater value for money is achieved and accountability is strengthened (Kenya Local Government Reform Programme, 2007).

The Municipal Council's Development Plan (CDP) strategies address the constraints and provide an enabling environment for the town industrial transformation particularly: measures to increase access to safe water and sanitation, increase in coverage of electricity and improvement of the existing road network, provide quality healthcare, and increase the exploitation of district's local resources and Material waste collection and management within the jurisdiction area of the Municipal Council. There exists an appreciation of the good services offered by the council to the community. However the council's have not developed a framework aimed at addressing present and future development concerns through appropriate

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investment projects. Rapid urbanization in the district has stretched the council's ability to deliver services. Unplanned and indiscriminate land sub-division and change of use as well as uncontrolled utilization of natural resources has led to rapid degradation of the environment and mushrooming of unplanned settlement. The systems of revenue collection, debt recovery, and resource allocation require harmonization and improvement to modern operating systems with enhanced accountability and transparency. The Institute of Economic Affairs (2005), it is evident that local authorities are uniquely and strategically placed to act as a link between local and central government, between resources and needs, and between the governed and the governors. In spite of this unique placement, they have failed to competently meet public expectations. There is disillusionment with the performance, management and competence of local authorities in providing the services that they are mandated to provide.

A further indication of the growing dissatisfaction with the services provided by the existing local authorities is seen in the rise of residents associations demanding court interventions as a mechanism for compelling the local authorities in Kenya to provide services on a regular basis. There exist a link between planning and budgeting, which is essential if plans are to be implemented (Watson, 2007). The allocation of economic resources for public projects is influenced by quantitative appraisal techniques which are applied on a wider scale leading to the rigorous application of investment appraisal and financial planning. The advocates the investment appraisal techniques felt that the absence of the distinction between investment outlays and ordinary or current outlays may lead to unintended neglect of infrastructure or accumulated assets.

The capital spending is generally about physical assets with a useful life of more than one year; including capital improvements or the rehabilitation of physical assets to extend the useful life of the asset to service delivery to the users of the facility. The local authorities make capital spending on the physical facilities with the aim of providing services within their areas of jurisdiction. The capital budgeting practices need to be considered together with investment proposals (Institute of Policy Analysis and Research-IPAR, 2004). The implications of uncertainty for public investments decisions remain controversial. Screening and selection procedures may differ. But when large sums of capital expenditure are involved, the authority

for the final approval may rest with top management. The approval authority may be delegated for certain types of projects and may be affected subject to the amount of outlay, prescribing the selection criteria and holding the authorized person accountable for results.

## 1.2 Statement of the Problem

Previous studies indicate a deteriorating trend in implementation of projects in local authorities. The Institute of Economic Affairs, for example asserts that three out of four (75%) of the projects initiated by the local authorities collapse after three years. This has inevitably led to huge wastage of financial and other resources. Some reasons cited for this poor state of affairs are: inappropriate project feasibility analysis, poor project selection and inadequate funding. All these suggest insufficient capital project conceptualization and implementation processes. A key aspect of such processes is capital budgeting; a tool which if effectively used prevents loss and wastage of financial resources. Despite the importance of capital budgeting, however, it is not clear to what extent local authorities have embraced these practices. This study seeks to assess the influence of capital budgeting practices on the operation of projects initiated by the local authorities in Kenya.

## 1.3 Objectives of the Study

The general objective of this study was to assess the influence of Capital Budgeting Practices on the operation of projects initiated by Local Authorities in Kenya. The specific objectives of the study were;

i) To identify the Capital Budgeting Practices used on the appraisal of projects initiated by the Local Authorities in Kenya.

ii) To determine the extent of use of the Capital Budgeting Practices on projects initiated by the Local Authorities

iii) To establish the extent Capital Budgeting Practices do influence the operation of projects initiated by the Local Authorities?

## 1.4 Research Questions

The study was guided by the following research questions;

i) What are the Capital Budgeting Practices used on the appraisal of projects initiated by the Local Authorities in Kenya.

ii) Determine the extent of use of the Capital Budgeting Practices on projects initiated by the Local Authorities

iii) To what extent the Capital Budgeting Practices do influence the operation of projects initiated by the Local Authorities?

## 1.5 Significance of the Study

The study on the assessment of the influence of capital budgeting practices on the operation of projects initiated by the Municipal Councils in Kenya was important in the several ways: - To the Ministry of Local Government it can help in reshaping the policies related to capital budgeting practices for the public infrastructure development and the appraisal methods used by the Municipal Councils for investment projects approval. To research students the information obtained can bridge the gap between the researched work and un-researched areas.

## 1.6 Scope and Justification of the Study

### 1.6.1 Scope of the Study

The study focused on the capital budgeting practices and their influence on the operation of projects initiated by the Kisii Municipal Council and any area outside Capital Budgeting Practices and Municipal Councils was not be part of this study. The data collected was within the context of the questionnaire. The findings of this study covered the concepts about the capital budgeting practices and their influence on the operation of projects.

### 1.6.2 Justification of the Study

Local Authority Service Delivery Action Plan's (LASDAP) was introduced in all Local Authorities in 2002 with the intention of putting in place a participatory planning system, implementing and monitoring service delivery projects in their areas of jurisdiction. The bottom-up approach of the LASDAP engages the citizenry and provides ownership of the projects identified through the LATF, thus encouraging accountability and participation. The

findings of this study could be lessons to empower emerging Local Authorities to overcome the prevailing constraints. Therefore the findings of this study can be generalized to other local authorities in Kenya as they operate under the same rules and regulations set by the Ministry of Local Government.

## 1.7 Limitations of the Study

The study findings were limited to the local authorities as the independent variables may be viewed differently in the government funded projects unlike in business firms. This study was also limited to survey study design for the period between 2004 and 2010.

## 1.8 Assumptions of the Study

This study was based on the following assumptions.

i) The respondents selected for this research provide honest answers to the questions raised on the influence of Capital Budgeting Practices on the operation of projects initiated by Kisii Municipal Council.

ii) The sample size selected for this research was representative of the target population.

iii) The capital budgeting practices influenced the operation of projects initiated by the Local Authorities.

## 1.9 Operational Definition Terms

**Capital Budgeting-** is the process of determining which investment projects result in maximization of the shareholders value.

**Project** – is an undertaking that consumes resources and has future economic benefits to the society.

**Practice** – is an action of doing something as an established standard in the capital budgeting process in the municipal council's.

# CHAPTER TWO
## LITERATURE REVIEW

### 2.1 The Concept of Capital Budgeting

Capital budgeting is the process of analyzing potential fixed assets investments, (Eugene and Houston, 2004). Decisions on investments which take time to mature, have to be based on the returns which an investment it makes to the beneficiaries. Capital budgeting forms an important activity in any organization; huge sums of money can be wasted easily if the investment turns out to be wrong or unrealistic. The capital budgeting practice entails the techniques that seek to build on the concepts of the future value of the money which may be spent now. According to Eugene and Houston (2004), a budget is a plan that details projected inflows and outflows during future period. Thus capital budget forms an outline of the planned investments in fixed assets, and capital budgeting is the whole process of analyzing projects and deciding which one to include in the capital budget. The budgeting for any government department or ministry capital investment remains not well integrated into the formal preparation process. In general capital budgets in governments have multiple roles: as instruments of fiscal policy and to improve the net worth of the government, and particularly in the area of economic infrastructure as vehicles for economic development Davina (2008).

According to Sarraf (2005), capital spending is generally about physical assets with a useful life of more than one year; including capital improvements or the rehabilitation of physical assets to enhance or to extend the useful life of the asset. Capital spending is equated to development spending in which the government or its sections departments may include physical assets for government use like office buildings, physical assets of public good nature that also enhance private sector development like roads, water systems and intangibles like education and research. The local government has established structures that guide in budgeting its resources for the capital expenditure. According to Gupta S. et.al. (2008), every government and its sections has some arbitrary cut off point to distinguish capital from current expenditures; the relevant distinction is between capital and current (operating expenditure) in which the later deals with the purchases of assets to be consumed within one year regardless of expenditure size. But given the different definitions of capital, it does not necessarily call for dual budgeting system as separate data on expenditure or consumption and investment can be maintained

within a unified budget. The most common and serious problems with public sector capital budgeting arise from its interface with current spending. According to Davina (2008), capital and current expenditures need to be considered separately such that capital spending within the budget needs is clearly identified separately and that capital specific procedures are needed for asset procurement and for project management and the subsequent monitoring, and disposal of capital assets. However for other purposes, they need to be considered together and investment proposals need to be appraised in terms of both capital and operating costs.

Sarraf (2005), the structure and funding of a capital budget can be more than borrowing, although depending on the situation, borrowing may be the most important source of funds. In principle, the taxes levied on property, although paid from the current income, are considered as levies on capital and included in capital receipts. Also in situations where a development plan exists and there is a surplus from the current budget is yet another source of receipts. Moreover, depreciation allowances represent, in accounting parlance, a balancing entry (a contra entry), in that allowances that are charged to the current account are treated as capital receipts. Within the Ministry of Local Government, particularly in the municipal council's is there a section that is familiar with a spending unit's activities  that may deal with both capital and current spending, and is there any relationship in terms of efficiency and effectiveness in capital projects implementation within the municipality's area of jurisdiction.

The implications of uncertainty for public investments decisions remain controversial. It is widely held that individuals are not indifferent to uncertainty and will not, in general, value assets with uncertain returns at their expected values. Depending upon the individual's initial asset holdings and utility function, he or she will value an asset at more or less than its expected value. In the private sector markets, investors do not choose investments to maximize the present value of expected returns properly adjusted for risk. The issue is whether it is appropriate to discount public investments in the same way as private investments. Several positions arise on this issue; first, risk should be discounted in the same way for public investments as it is for private investments; to treat risk differently in the public sector  will result in overinvestment in this sector  at the expense of the private  investments yielding higher returns. According to Hirshleifer (1966), in perfect capital markets, investments are discounted

with respect to both time and risk and that the discount rates obtaining in these should be used to evaluate public investment opportunities. The second issue the government can better cope with uncertainty than private investors and therefore the government should not be evaluated by the same criterion used in the private markets. Therefore the government should ignore uncertainty and behave as if indifferent to risk. The government should then evaluate the investment opportunities according to their present value computed by discounting the expected value of the net returns, using a rate of discount equal to the private rate appropriate for investment with certain returns. The government invests in a greater number of diverse projects and is able to pool risks to a much greater extent than the private investors.

The evolution of capital budgetary management has varied widely with detailed procedures and many issues; in the 1960s and 1970s it was believed that the government allocations could be reduced to a scientific process  by systems like planned programming and budgeting system. This has turned out today not to be true as most public policies, finding the best way forward depends not only on analysis but very largely on pragmatism, political intuition and windows of political opportunity and development expenditure management systems have been more narrowly focused, and policy initiatives have been concentrated on areas which happen, at the time, to be of highest priority, rather than seen as a continuing, comprehensive plan. This creates white elephant projects despite huge resource utilization. The capital budgeting practices tends to utilize project appraisal techniques, but when a project stalls, or is completed and underutilized; what happened during the budgeting process and its subsequent appraisal procedures before implementation.

The local government departments have authorization systems and practice; it may not be feasible to specify standard administrative procedures for approving investment proposals. Screening and selection procedures may differ. But when large sums of capital expenditure are involved, the authority for the final approval may rest with top management. The approval authority may be delegated for certain types of projects and may be affected  subject to the amount of outlay, prescribing the selection criteria and holding the authorized person accountable  for results. Funds are appropriated for capital expenditure after the final selection of investment proposals. Generally the senior management tightly controls the capital

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expenditures and budgetary controls may be rigidly exercised, particularly when the council is facing liquidity problems. The expected expenditure should become apart of the annual capital budget, integrated with the overall budgetary system. Top management should ensure that the funds are spent in accordance with appropriations made in the capital budget.

## 2.2 Capital Budgeting Practices
### 2.2.1 The Net Present Value

The net present value method is a discounted cash flow approach to capital budgeting. The net present value (NPV) of an investment proposal is the present value of the proposal's net cash flows less the proposal's initial cash outflow, (Van Horne and Wachowicz, 2005). The Ministry of Local Government has new and operating municipal councils throughout the country; and in each case there are liabilities and assets, the only difference is the degree of operations and the level of service delivery within their areas of jurisdiction.

Like any other service firm, the municipal council's have the opportunity to change the characteristics of their initial package by transactions in real or financial assets, that is, by investment or financing decisions as it may be supported by the Ministry of Local Government to meet their obligations in service delivery top the public in general. The only challenge is to determine which set of current and planned future service transactions will maximize the current market value of the council ("firm"). This is by having adequate proxy for the council's basic objective of providing quality, efficient and effective services to the community at large within its area of operation. This can be approached by specifying the council's objective as a function of investment and financing, and capturing the interactions of the financing and the investment opportunities. Considering that the council has identified a series of investment opportunities. It must decide which of these "projects" to under take, meaning that some projects may be future investments opportunities anticipated for time (t= 1, 2, 3…).

Accepting the project does not imply immediate investment, but simply the project is included in the council's financial plan. At the same time the council may wish to arrive at the financing plan for the period (t= o, 1, 2...). According to Stewart (1974), the marginal investment is justified if the projects Adjusted Present Value (APV) is positive;

$$APV = A_i + \sum_{t=0}^{t} [\, f_t.z_{it} + k.C_t\,] \quad > 0 \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \text{(i)}$$

Where;

$A_i$ is the change of the project proportion in respect to the proportion of that project accepted.

$f_t$ is the shadow prices for debt capacity ($z_{it}$)

$z_{it}$ is the debt capacity in time (t), as it may be defined as a limit of outstanding debt in the same period of time (t)

k is the shadow prices of the expected cash inflow ($C_t$) to the council in time (t), with net outflow (capital investment).

In the optimal situation $APV_i = f_t$ if the project is accepted (the proportion of the project is equal to 1; if the project is rejected then the proportion of the project is zero, then APV is negative and the shadow price for the project is also zero ($f_t$=0). This implies that the project can partially be accepted if $APV_i = f_t$ =0. Adjusted Present Value is used because in the optimal situation $A_i$, the project's direct contribution to the objective of effective service delivery in the council's is "adjusted for" the projects direct effects on other investments and financing options. The side effects occur because of the projects effects on debt capacity and the sources or uses constraints.

$$NPV = \sum_{t=0}^{n} \{ C_t \,/\, (1+r)^t \} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad \text{ii}$$

The understanding of the Adjusted Present Value of a project, the proportion of that project accepted, the debt capacity and the expected cash flows need to interpreted as discrete amounts and are relevant for the simple accept- reject choice given the project scale. The Adjusted Present Value and NPV are intended to measure the net contribution of the project to the market value, taking into account of the interactions of the project with other investments and financing opportunities (Pandey, 2005).

The hurdle rate (cost of capital, and expected rate of return) will give some value that ensures that:

NPV=APV

$$\sum_{t=0}^{n} \{C_t / (1+r)^t\} = A_i + \sum_{t=0}^{t} [f_t.z_{it} + k.C_t] \quad > 0 \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad iii$$

Hence, **NPV>0** if **APV>0,** and in this situation **r** is the hurdle rate or minimum acceptable expected rate of return for the project. Therefore NPV is the most common approach for appraising projects using the discounted cash flows for both private and public sectors. NPV requires the selection of a discount rate that gives NPV>0. For capital budgeting process where multiple projects are being appraised and limited budgets mean that some projects cannot be funded, NPV helps in ranking in order of priority. The objective of this practice is the maximization of NPV. Where the budget rationing exists, the method is preferred for appraising projects as the practice addresses efficiency objectives of the desired investment projects (Pandey, 2005). The adjusted present value of a project if financed solely by ownership equity plus the present value of all the benefits of financing; this benefits are realized if the projects degree of operation is greater , that is , it operates for many years.

Moreover, the output of profits from the projects in operation is influenced by the level of service delivery. The net present value measures the excess or the shortfall of cash flows in present value terms once financing charges are met. Investment funds in municipal council's are committed to target a specified rate of return and a particular degree of service delivery to the public. Performance of the projects gives a direct comparison between the profitability of the project and the desired rate of return, that is, revenue generated by the operating projects. Net present value is the indicator of how much value an investment adds to the firm; it is sensitive to the reliability of the future cash flows that the project must yield (Pandey, 2005). The reliability is dependent on the operation of the projects. The relationship that may exists between the capital budgeting practices and the operation of the projects may affect the value of the firm which is pegged on the level of performance.

### 2.2.2 Internal Rate of Return

The Internal Rate of Return is the discount rate for a project that will result in a NPV=0, that is, the rate at which the Present Value (PV) of measured benefits equals the PV of measured costs. Where IRR is used in a broader economic analysis, the term "Economic Internal Rate Return" is often coined in projects appraisal. Where the discount rate is to be selected for a project, the IRR derives a percentage value representing the rate of return on the project. The IRR is used to appraise individual projects and provide information to help make decisions about appraising and ranking multiple investment opportunities (Pandey, 2005). With individual projects, the appraisal must compare the IRR with the pre-selected rate of return (hurdle rate) which usually represents the organization's cost of capital. The objective of this capital budgeting practice is to ascertain the project's earning rate (IRR) equal to or greater than the hurdle rate. Most projects are either government funded or sponsored by the World Bank.

The World Bank's opportunity cost of capital is 12%, but in such situation if the IRR for the project is 8%, the project is rejected. But on the other hand if the project's IRR is 15% the project will be accepted. In situations where mutually exclusive projects are appraised or the ranking of similar projects with limited budgets, the IRR practice is used in conjunction with Net Present Value (NPV). The IRR as a capital budgeting practice it indicates the relative efficiency among projects (Pandey, 2005). The government projects normally are designed to give service to the public therefore the hurdle rate may not be of great impact when decisions are made by the policy makers, this probably may affect the operations of such projects.

### 2.2.3 Accounting Rate of Return

According to Van Horne (2006) ARR measure is the ratio of the average annual profits after taxes to the investment in the project. The principle virtue of ARR is its simplicity in use on project proposals in which it is compared with a required rate of return to determine if a particular proposal is accepted or rejected. The practice further ignores the time value of the money and the benefits of the last year are valued the same as those benefits in the first year. The discount rate often used in capital budgeting that makes the net present value of all cash flows from a particular project equal to zero (Pandey, 2005). The higher a project's internal rate of return, the more desirable it is to undertake the project. The ARR technique is like a

return on capital employed or return on investment, when using it in appraising a capital project the accounting rate of return is estimated that the project should yield. If it exceeds a target rate of return, then the project is undertaken. ARR is an accounting method used for purposes of comparison. The major drawbacks of ARR are that it uses profit rather than cash flows, and it does not account for the time value of money.

### 2.2.4 Pay Back Period

According to Pandey (2005), payback is considered one of the most popular and widely used traditional methods of evaluating investment proposals. Many firms use the technique as an investment method of ranking projects with a predetermined standard (payback) that may be set by the management. Any project with a payback period less than the pay back standard is accepted. The emphasis of this practice is on the early recovery of the investment. Thus, it gives an insight of the liquidity of the project. Most of the government projects the payback period may not be necessary as in most instances the projects are done with the aim of providing good service to the public. The practice gives equal weight and timing of cash flows, it give equal weights to returns of equal amounts even though they occur in different periods. In most case the government projects, the determination of the maximum acceptable payback period is not possible. According to Kisii Municipal Council, LASDAP report, (2008), therefore there is no rational basis for setting a maximum payback period for projects as most decisions are subjective.

### 2.2.5 Profitability Index

Profitability index (PI), also known as Profit Investment Ratio (PIR) and value investment ratio (VIR), is the ratio of investment to payoff of a proposed project. It is a useful tool for ranking projects because it allows you to quantify the amount of value created per unit of investment. Assuming that the cash flow calculated does not include the investment made in the project, a profitability index of 1.0 indicates breakeven. Any value lower than one would indicate that the project's PV is less than the initial investment. As the value of the profitability index increases, so does the financial attractiveness of the proposed project (Pandey, 2005).

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## 2.2.6   Determining the Discount Rates for Government Projects.

Appraisal involves a careful checking of the basic data, assumptions and methodology used in project preparation, an in-depth review of the work plan, cost estimates and proposed financing, an assessment of the projects organizational and management aspects, and finally the viability of project (Pandey, 2005). It is mandatory for the Project Authorities to undertake project appraisal or at least give details of financial, economic and social benefits and suitably incorporate it. Economic appraisal of a project is concerned with the desirability of carrying out the project from the standpoint of its contribution to the development of the national economy. Whereas financial analysis deals with only costs and returns to project participants, economic analysis deals with costs and returns to society as a whole. The rationale behind the project appraisal is to provide the decision-makers with financial and economic yardsticks for the selection or rejection of projects from among competing alternative proposals for investment.

Economic viability of the project is invariably judged at 12 percent discount rate (opportunity cost of capital). However, in case of financial analysis, the actual rate of interest, that is, the rate at which capital is obtained is used. For the government-funded projects, the discount rate is fixed by the Budget department in Ministry of the Finance for development loans and advances on yearly basis. In case the project is funded by more than one source, the financial analysis is carried out on the weighted average cost of capital (WACC) for each project. If the project is financed through foreign grants, the financial analysis is undertaken at zero discount rate. However, the economic analysis is undertaken at 12% discount rate. A financial appraisal looks at a project investment from an individual point of view, while economic analysis takes a societal point of view. Financial and economic values are similar if there is no policy failure. The usual approach is to begin with a financial analysis and then undertake a broader economic analysis. Companies tend to focus on financial analysis.

Governments and development banks tend to do both levels of analysis. The society is myopic and tends to have a short time horizon. On the basis that a discount rate emulating the "private sector" opportunity cost of capital favours short-term investments, some researchers argues that certain situations require a lower discount rate called the social time preference rate. A lower

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rate accommodates longer-term projects, often by the public sector and where the private sector might not wish to invest. Environmental projects often fall into this category. As an example, investing in reforestation projects where trees need 80 years to mature will usually lead to negative net returns based on prevailing market (opportunity cost) discount rates. Using a lower, social time preference rate might make the investment economically viable. Another reason for governments using a lower discount rate is risk pooling. Governments undertake many projects, some of which fail. The loss to investors (members of society) is spread out and therefore small for any individual.

## 2.3 Empirical Literature.

According to Winter (1986), the capital budgeting practices among the large firms indicated a wide spread use of the discounted cash flow (DCF) methods, especially internal rate of return. At the same time, many firms continued to use simple pay back or related methods. The study findings indicated the differences between theory and practice in the implementation of the DCF analysis. In this the firms use either a weighted average cost of capital or the cost of a specific source of funds in determining the hurdle rate. Most firms however employed some form of capital rationing and restricted capital expenditure even though it generally means neglecting profitable projects. The observation under capital rationing is that projects must compete against each other and not against a profitability standard. This study did not capture the issues related to the capital budgeting practices and operation of the projects.

Arnold & Hatzopolous (2000) and Graham & Harvey (2000) carried out a survey study to identify the practical usage of investment appraisal techniques among the large manufacturing firms of UK had revealed that NPV and IRR are less behind its rivals in practically. Therefore they have commented that there is a gap between usages of appraisal techniques in practically and theoretically. According to Koller (2006),capital investment decisions normally represent the most important decisions that an organization makes, since they commit a substantial proportion of a firms resources to actions that are irreversible; normally such investment will take more than one year period and those includes investments in plant and machinery, research and development, advertising and warehousing facilities. This motivates this study to assess the influence of the capital budgeting practices on the operation of projects.

According to Winter (1986), an analysis on the energy related investment projects, the study focused on projects at the margin of acceptability and on the financial analysis, this study was designed to address tax incentives as independent variable on the investment decision making process. The independent variable used in this study was tax incentive and its relationship to the dependent variable margin of acceptability. This study will focus on the influence of capital budgeting practices on the project appraisal and its subsequent implementation process. This motivates this research on the assessment of capital budgeting practices on the operation of projects initiated by Kisii Municipal Council.

According to Graham and Harvey (2001), there are four main capital budgeting practices the managers may use when evaluating an investment project. The Net Present Value (NPV) and the Internal Rate of Return methods are considered as the Discounting Cash Flow (DCF) Practices; the payback Period (PBP) and Average Accounting Rate of Return (ARR) methods are considered as non- Discounting Cash Flow Practices. In fact there are other practices like Sensitivity Analysis, Real Options, Book Rate of Return and Simulation Analysis. The analytical techniques used by executives in capital budgeting have increased in terms of sophistication and the frequency of use by the Chief Financial Officers (CFOs) which indicates that the NPV and IRR techniques are the most frequently used capital budgeting techniques, but the study by Graham and Harvey (2001), did not analyze the influence of the sophisticated capital budgeting practices on the operation of the selected capital investments (projects).

According to Klammer (1972), in his study in the U.S large firms, 19% indicated the use of DCF methods as their primary method to evaluate projects and this was as early as 1959; the majority, 34% of the chief executives used pay back period and the Accounting Rate of Return. The study findings were only concentrated on the best method that was used as the primary tool for evaluation or appraisal of the capital projects but the study didn't attempt to capture or disclose issues related to the influence of the sophisticated methods preference in use and the operation process of these capital projects. This gap motivates the researcher to analyze the Capital Budgeting Practices and their influence on the operation of public projects particularly those initiated by Kisii Municipal Council. Trahan and Gitman (1995), researched on the

capital budgeting practices that are used by the firms and their research was a comparative study of the best small firms and large companies. The variables of the study were the size of the firm and the capital budgeting practice used. The findings of the study indicated that 88% of the firms used the DCF methods as their primary tools for project analysis , the methods were more important in large firms than the small firms.

According to Ryan and Ryan (2002), larger firms generally deal with lager projects, which make the capital investments in the use of more sophisticated techniques less costly, and there was a positive relationship between firm size and the use of the DCF methods. Their research did not focus on the relationship of the capital budgeting practices used and their influence on the size of the firm concerning the operation of the projects (capital investments). Schultz (1988), expressed that there is a relationship between financing decisions and economic development, that the level of economic development of a country and the sophistication of the capital budgeting practices used by the Chief Financial Officers are positively related. This study focused on the developed and the developing countries and the DCF methods used by the CFOs. This study focused on the assessment of Capital Budgeting Practices influence on the operation of the projects initiated by Kisii Municipal Council.

2.4 **The Conceptual Framework:** The Influence of Capital Budgeting Practices on the Operation of Projects initiated by the Local Authorities.

The figure below is a conceptual framework that directs this study and it shows the relationship between the variables, that is, capital budgeting practices and operation of the projects initiated by the local authorities.

```
┌─────────────────────────────────┐
│ Independent Variables:          │
│ Capital Budgeting Practices     │
│ 1. NPV                          │
│ 2. IRR                          │
│ 3.  Profitability index         │
│ 4. Payback Period               │       ┌──────────────────────────────────┐
│ 5. ARR                          │       │ Intervening Variable(s)          │
└─────────────────────────────────┘       │ -LASDAP project Appraisal process.│
              │                            │ -   Managerial Flexibility        │
              │        ◄───────────────────│ -   Investment timing             │
              │                            │ -   Intermediate or long-term plan│
              │                            │     projects.                     │
              │                            │ -   New Information Strategy       │
              ▼                            └──────────────────────────────────┘
┌─────────────────────────────────┐
│        Dependent Variable       │
│ Operation of projects in the Local Authorities.│
│        Service delivery          │
└─────────────────────────────────┘
```
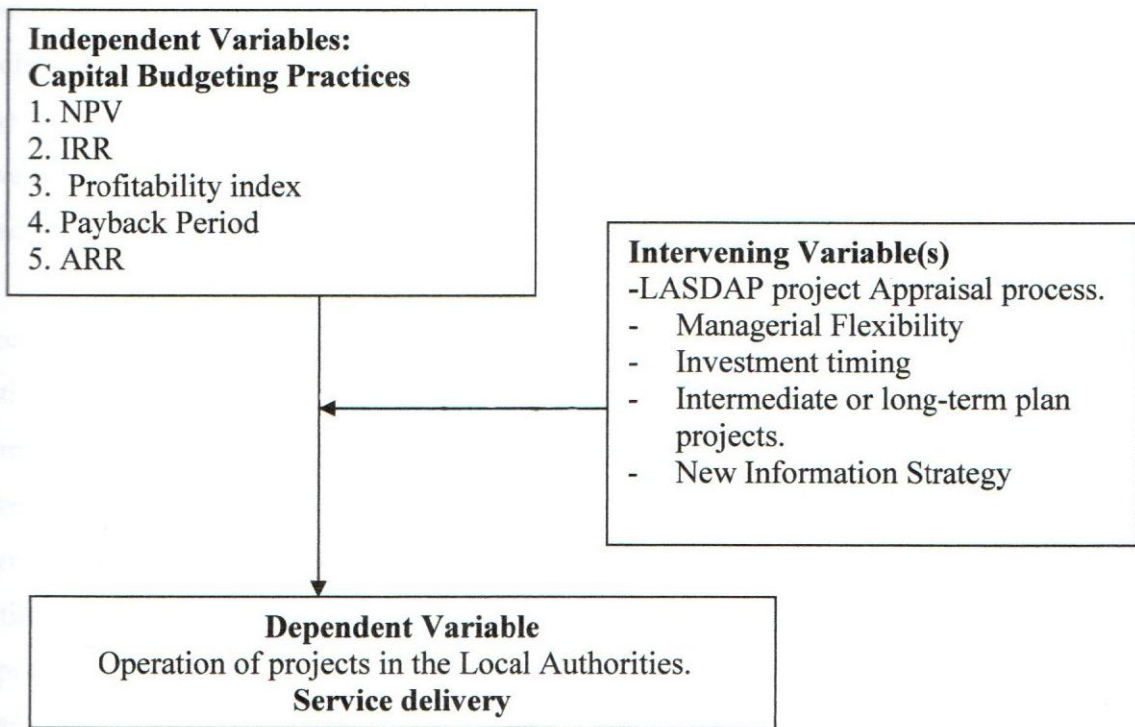
Figure 2.1 The Conceptual Framework;

**Source** (Author, 2010).

The traditional investment appraisal methods such as Net Present Value (NPV) and the Internal Rate of Return (IRR) which are considered sophisticated capital budgeting practices under the Discounted Cash Flows (DCF), fail to account for the managerial flexibility to adapt and revise later decisions in responses to the changes in the market situation or conditions. They are based on the assumption that once an investment project is accepted it should be kept until the end of its expected economic life. In reality, economic conditions, due to uncertainty surrounding the project, change over time. As a result, competitive interactions occur all the time. In such situations management's expectations also change over time and arrival of new information resolves some of the initial uncertainty about the project's environment conditions. Therefore

management may want to change its initial decision or strategy to cope with new situation. The fact remains that the DCFs method are not misused but it is rather the application of wrong valuation practices altogether, since DCFs ignore the value of management flexibility.

Most of the projects under the LASDAP management committee in the municipal councils depend on the revenues and LATF as the sources of capital for the projects. This management positions in LASDAP, some are political and are likely to change; operating flexibility on decisions is important, such option can have option to delay, expand or abandon the project. The strategic option is related to the project interdependence with future and follow-up investments within the municipality. Hence this is based on the modern capital budgeting practice called the real option values that exist during the time of investment decision making.

According to Sick, G. (1989), the Real Options Theory express that the real assets have got options on them which can be exercised by the decision makers. LASDAP management committee may choose the time-to-build option investment (staged Investment), when an investment costs occur in stages there is always an option to abandon the next stage of the investment if expectations by the management change unfavourably; and each stage is an option on the value of the subsequent stages. This option is important in long-term development capital-intensive projects like infrastructure development by the municipal council's. The option to wait (Investment Timing), the NPV rule traditionally is used to accept or reject investment opportunities. Its rule assumes that the decision setting is to invest now or never. This neglects one important characteristic, timing, which is common in the investment opportunities. When irreversibility and uncertainty are present, investment expenditure involves the exercising or killing of an option. If the investment is undertaken the option to invest is exercised or killed.

According to Pandey (2005), The Utility theory is expressed in terms if risk preference on the individual decision makers. The theory incorporates the decision maker's risk preference explicitly into the decision procedure. The rational decision maker would maximize their utility by accepting the investment project which yields utility to him. This sets the conflict of interest among the LASDAP committee members for their utility values concerning the various projects

are not the same or equivalent. The utility theory approach can be applied to capital budgeting decisions provided the decision maker's utility functions be defined. The use of the utility theory in capital budgeting is not common; the theory can only be used as a guide for political investment projects that are mid-term for political mileage.

Further, Pandey (2005), on sensitivity analysis in capital budgeting practices in the matters of investment project evaluation, the forecasts of the cash flows are used which depend on the expected revenue and costs. Expected revenue is a function of sales volume and the unit selling price. Most projects initiated by the Kisii Municipal Council are sunk costs as no sales volume and price may be attached to capture the concept of cash flows. Most of these projects are funded from LATF which does not require any profit apart from satisfaction of the common citizens a condition that cannot be quantified monetarily. Therefore sensitivity analysis in relation to the analysis of the project's NPV or IRR for a given change in one of the variables is not possible. The more sensitive NPV is the more critical is the variable. In sensitivity analysis for each forecasts three assumptions are held (Pandey, 1999); pessimistic, expected and optimistic. These assumptions may help the LASDAP committee members to forecast on questions like "what if". What if the project is delayed or outlay of cash escalates or the project life is more or less than anticipated. The sensitivity analysis examines the sensitivity of the variables underlying the computation of NPV or IRR rather than to quantify risk. The procedure used in the public capital budgeting process for projects does not allow for sensitivity analysis and that may influence the operation of the same projects.

# CHAPTER THREE
# RESEARCH METHODOLOGY

## 3.1 Research Design

This study was a descriptive survey. A survey study is used when collecting information from members of a population in order to determine the current state of affairs as they exist in that population with respect to one or more variables (Orodho and Kombo, 2002). The intention of this survey research was to gather data at a particular point in time and use it to describe the nature of existing conditions and this study assessed the relationship between the variables: Capital Budgeting Practices and the operation of the projects initiated by Local Authorities, particularly in Kisii Municipal Council.

## 3.2 Area of Study

This study was conducted in Kisii Municipal Council.

## 3.3 Target Population

The study target population was 106 respondents in the Local Authority Service Delivery Action Plan (LASDAP) Committee: Council representatives 59, religious organization 16, organized groups (or unions) 31respondents; the people who were directly involved in the projects initiated by the Local Authorities.

## 3.4 Sample Design.

The study sample for any study was determined scientifically using the formulae:

$$n = \{ Nc_v^2 \} / \{ c_v^2 + (N-1) e^2 \}$$

Where: $N$ is the target population (106)

$c_v$ is the coefficient of variation (take 0.5)

e- tolerance at desired level of confidence, at 95% confidence level (take 0.05) (Nasiurma D.K 2000)

$$n = \{ N c_v^2 \} / \{ c_v^2 + ( N-1) e^2 \}$$

$$= \{106 \times 0.5^2 \} / \{ 0.5^2 + (106 - 1) 0.05^2\}$$

$$= 26.5 / 0.5125$$

$$= 51.7; \text{ hence 52 respondents were selected for the study}$$

The study sample was 52 respondents consisting of: 29 Council representatives, 8 religious organization and 15 organized groups (or unions) respondents.

The proportion of the respondents was obtained using the formula:

$$n=\sum_{n_i=1}^{n} P_i.n$$

Where **n** was the sample (52 respondents)

$P_i$ was the proportion of the sub-group in the target population.

For each sub group: Council Representatives {59/106} x 52 = 28.9; 29 respondents were selected for a sample, {16/106} x 52 = 7.85; 8 respondents were selected; and {31/106} x 52 = 15.2, 15 respondents.

Stratified random sampling technique was applied to select a sample for this study. This was necessary since the researcher identified sub-groups in the target population whose responses are important in achieving the objectives of this study.

## 3.5 Data Collection

### 3.5.1 Data Collection Instrument

A structured questionnaire was used for data collection. The instrument was given to the respondents who responded to the questions in the research instrument for this study.

### 3.5.2 Administration of the Instruments

The researcher obtained the introduction letter (letter of authority) from Kisii University College for legal and social reasons and used it to request for appointments with the respondents. The respondents were provided with the questionnaire by the researcher.

### 3.5.3 Validity and Reliability of the Instruments.

#### 3.5.3.1 Validity of the Instruments

The questionnaire consisted of a number of questions printed or typed in a definite order. Content validity was provided through adequate coverage of the topic under investigation on the questionnaire as it deemed right as per the expert advice. The advantage of the questionnaire

was that it separated the researcher from biasness and the respondents were able to respond in their own understanding.

### 3.5.3.2 Reliability of the Instruments.

Reliability is the ability of the instruments to provide consistent information in order to draw informed conclusions. Reliability of the questionnaire was determined by test-retest method in the region of study by using respondents who were not part of the study sample but worked in Kisii Municipal Council and in the positions relevant to the research study.

### 3.6 Data Analysis

Quantitative data collected in this study was edited for completeness and consistency before processing. The data was analyzed using descriptive and inferential statistics. Descriptive statistics was used to summarize the data collected during the survey. This involved working out the percentages and frequencies, which were used to asses the relationship of the variables. Simple Regression Analysis and Pearson's correlation coefficient was used to assess the dependence of the variables in this study. The results of this study were tested at a 95% confidence level. The simple regression model used was: $y_i = a + bx_i$

Where    $y_i$ was the dependent variable

$X_i$ was the value of the independent variable.

a and b   were regression coefficients (parameters)

# CHAPTER FOUR

# DATA ANALYSIS, INTERPRETATION AND PRESENTATION

## 4.1 Introduction

This chapter comprises of the analyzed data collected from the field by the researcher. It further indicates the findings obtained from the field and their implications to the study. The data collected is also presented using tools like frequency tables, graphs and narrative.

## 4.2 Background Information

### 4.2.1 Gender of the Respondents

The study sought to establish the gender of the respondents to the study. Table 4.2.1 below shows the response rate obtained from the field.

**Table 4.2.1 Gender of the Respondents**

| Gender | Frequency | % frequency |
|--------|-----------|-------------|
| Female | 12 | 23.1% |
| Male | 40 | 76.9% |
| Total | 52 | 100% |

Source field data (2010)

From the table 4.2.1 above, it shows that 76.9% (40) of the total respondents were of the male gender and 23.1% (12) were female. This in indicates that the projects initiated by the local authorities is dominated by the male gender and that is gender insensitive.

### 4.2.2 Age of Respondents

The study sought to establish the age of the respondents to the study. The table 4.2.2 below shows the response rate obtained from the field.

**Table 4.2.2 Age of the Respondents**

| Age | Frequency | % frequency |
|-----|-----------|-------------|
| 20 to 30 years | 7 | 13.5% |
| 31 to 45 years | 32 | 61.5% |
| Above 45 years | 13 | 25% |
| Total | 52 | 100% |

Source field data (2010)

From the table 4.2.2 above it shows that 61.5% (32) of the total respondents are aged between 31 to 45years. This indicates that the projects initiated in the local authorities are dominated by the persons of middle gender.

### 4.2.3 Education Level of the Respondents.

The study sought to establish the education level of the respondents to this study. The table 4.2.3 below shows the response rate obtained from the field.

**Table 4.2.3 Education Level of the Respondents**

| Education Level | Council representatives | | Religious organizations | | Organized groups | | Total frequency | Weighted % frequency |
|---|---|---|---|---|---|---|---|---|
| | Freq. | % | Freq. | % | Freq. | % | | |
| Primary | 1 | 1.9% | 0 | 0% | 1 | 1.9% | 2 | 3.8% |
| Secondary | 2 | 3.8% | 0 | 0% | 1 | 1.9% | 3 | 5.7% |
| Certificate | 13 | 25% | 2 | 3.8% | 3 | 5.77% | 18 | 34.57% |
| Diploma | 7 | 13.46% | 2 | 3.8% | 4 | 7.7% | 13 | 24.96% |
| Degree | 5 | 9.6% | 3 | 5.77% | 5 | 9.6% | 13 | 24.96% |
| Masters | 1 | 1.9% | 1 | 1.9% | 1 | 1.9% | 3 | 5.7% |
| Total | 29 | | 8 | | 15 | | 52 | 100% |

Source field data (2010)

The table 4.2.3 above, it indicates that 34.57% (18) of the total respondents are holders of certificate level of education. While 24.96% have diploma level of education, also 24.96% of the respondents do have bachelors' degree. This indicates that the projects initiated by local authorities are dominated by persons of certificate level of education. The selection of members into the LASDAP committee is insensitive to the educational level of the participants in the projects initiated by the local authorities.

### 4.2.4 Position held by the Respondents in the Local Authority.

The study sought to find out the positions held by the respondents of this study in the Kisii municipal council in relation to the LASDAP projects. The table 4.2.4 below shows that the response rate obtained from the field.

**Table 4.2.4 Position held by the Respondents in the Local Authority.**

| Position | Frequency | % frequency |
|---|---|---|
| Executive member in the council committee's | 23 | 44.2% |
| Council Employee (Town Hall) | 6 | 11.5% |
| Religious Organizations Representative to LASDAP | 8 | 15.4% |
| Organized groups Representatives to LASDAP Committee | 15 | 28.8% |
| Total | 52 | 100% |

Source field data (2010)

From the table 4.2.4 above it shows that 44.2% (23) of the total respondents hold executive positions in the various committees in the local authority. 288% of the respondents are members in the committee as representatives from organized groups in the council's area of jurisdiction and 11.5% of the respondents are employees in the council who are included in the LASDAP committee. This indicates that projects initiated by the local authorities are sensitive to positions held by the respondents in various committees in the council.

## 4.3 Practice of Capital Budgeting Process in Kisii Municipal Council

The study sought to find out whether Kisii municipal council use a participatory capital budgeting process as an innovative practice when appraising projects. On the basis of the statements in table 4.3 below it consequently summarizes the responses obtained from the field.

**Table4.3 Practice of Capital Budgeting Process in Kisii Municipal Council**

| Statement | Frequency Yes | % frequency | Frequency No | % frequency |
|---|---|---|---|---|
| It enhances Accountability and transparency in projects financial matters. | 33 | 63.5% | 19 | 36.5% |
| Consultative action and right choice of projects gives good service delivery | 29 | 55.8% | 23 | 44.2% |
| Proper identification of project proportions for implementation and operation. | 15 | 28.8% | 37 | 71.2% |

Source field data (2010)

From table 4.3 above shows that 63.5% (33) of the total respondents expressed that participatory capital budgeting process enhances accountability and financial transparency for projects initiated by the local authorities while 36.5%(19) of the respondents expressed that it cannot enhance accountability and financial transparency in the local authority. This indicates that local authorities are sensitive to accountability and transparency on matters relating to projects.

The table 4.3 above further indicates 55.8% (29) of the total respondents indicates that the consultative action and right choice of projects leads to good service delivery; 44.2% (23) of total respondents expressed against the practice. From table 4.3 above it shows that 71.2% (37) of the total respondents indicates that proper identification of the projects proportions for implementation and operation is not an innovative practice during the capital budgeting process. These findings are in line with the Contingency theory, which has been discussed in the context of capital budgeting by Pike (1984; 1986), is closely related to the design of the

capital budgeting process. In this perspective resource-allocation efficiency is not merely a matter of adopting sophisticated, theoretically superior investment techniques and procedures. Consideration must also be given to the fit between the corporate context and the design and operation of the capital budgeting system (Pike, 1984). The findings of this study further concurs with a study carried out by  Kleiman & Sahu (1999) and Levy & Sarnat,  (1982), who expressed that  the first stage in the investment process  is the establishment of strategic and financial long-term investment goals, which should serve as a guide for managerial decisions during the budgeting process. This stage can hence be compared with the business planning process described by Bower (1970).

## 4.4 Capital Budgeting Practices and Project Appraisal.

The study sought to establish the kind of capital budgeting practices used on the appraisal of projects initiated by the Kisii municipal council.  This was to find responses in line with  the first research objective; table 4.4 below shows the response rate obtained from the field.

## Table 4.4 Capital Budgeting Practices and Project Appraisal.

| Capital Budgeting Practice | Frequency | % frequency |
|---|---|---|
| Internal Rate of Return (IRR) | 4 | 7.7% |
| Net Present Value (NPV) | 7 | 13.5% |
| Pay back Period (PBP) | 12 | 23.1% |
| Accounting Rate of Return (ARR) | 5 | 9.6% |
| Profitability Index (PI) | 24 | 46.2% |
| Total | 52 | 100% |

Source field data (2010)

From the table 4.4 above it show that 46.2% (24) of the total respondents indicated that profitability index is used on the appraisal of projects initiated by the local authorities. 23.1% (12) of the total respondents indicated payback period is the practice used. While the 13.5 %( 7) of the total respondents indicated net present value. While 9.6% (5) of the respondents expressed that it is the Accounting Rate of Return and 7.7% (4) expressed that it is the Internal Rate of Return. This finding concurs with Drury (2000) who explained the theory of capital budgeting that reconciles the goals of survival and profitability in which  the use of  appraisal techniques is important; Further this study is in line with a survey carried out by the Arnold and

Hatzopolous (2000) and Graham and Harvey (2000) who identified the practical usage of investment appraisal techniques, the findings revealed that NPV and IRR are less behind its rivals Profitability Index and Payback period and ARR. This shows that there is a gap between usages of appraisal techniques as indicated in table 4.4 above. Further the findings agrees with Trahan and Gitman (1995), who researched on the capital budgeting practices that are used by the firms and their research findings indicated that 88% of the firms used the DCF methods as their primary tools for project analysis.

## 4.5 Frequency of the Capital Budgeting Practice used by the Local Authorities.

The study sought to establish the frequency of capital budgeting practice used by the local authority in project appraisal. Table 4.5 below shows the response rate obtained from the field.

Table 4.5 Frequency of the Capital Budgeting Practice used by the Local Authorities.

| Capital Budgeting Practice | Frequency | % frequency |
|---|---|---|
| Internal Rate of Return (IRR) | 3 | 5.8% |
| Net Present Value (NPV) | 7 | 13.5% |
| Pay back Period (PBP) | 9 | 17.3% |
| Accounting Rate of Return (ARR) | 4 | 7.7% |
| Profitability Index (PI) | 29 | 55.8% |
| Total | 52 | 100% |

Source field data (2010)

From the table 4.5 above it shows that 55.8% (29) of the total respondents indicates that profitability index is the frequently used capital budgeting practice used by the local authority in the project appraisal more than others. The 17.3 % (9) of the total respondents indicated that it is the payback period which is frequently used practice for project appraisal. This study is in line with studies that have emphasised not only the adoption of sophisticated capital budgeting techniques but also a correct application of these techniques; the misapplication of these techniques lead to inappropriate investment decisions which is widely spread (Drury & Tayles, 1997;Hodder & Riggs, 1985). Hence, the way to apply the sophisticated capital budgeting techniques is a crucial issue when defining sophistication of capital budgeting practices.

## 4.6 Capital Budgeting Practices and Capital Budgeting Process.

Based on a weighted average scale of 5 to 1( 5= to greater extent, 4= great extent, 3= moderate extent, 2 = to a less extent and 1 no extent) the study sought to find out the capital budgeting practices in terms of the extent with which they are used in the capital budgeting process for the projects initiated by the local authorities. Table 4.6 below shows the response rate obtained from the field.

Table 4.6 Capital Budgeting Practices and Capital Budgeting Process

| Capital Budgeting Practice | 5 | 4 | 3 | 2 | 1 | Σ f | Σ wf | Σ wf/Σ f Weight Average |
|---|---|---|---|---|---|---|---|---|
| Internal Rate of Return (IRR) | 6 | 7 | 10 | 12 | 17 | 52 | 129 | 2.48 |
| Net Present Value (NPV) | 3 | 5 | 14 | 28 | 2 | 52 | 135 | 2.60 |
| Pay back Period (PBP) | 7 | 9 | 23 | 10 | 3 | 52 | 163 | 3.14 |
| Accounting Rate of Return (ARR) | 2 | 6 | 12 | 25 | 7 | 52 | 127 | 2.44 |
| Profitability Index (PI) | 9 | 24 | 8 | 6 | 5 | 52 | 182 | 3.50 |

Source field data (2010)

From table 4.6 above it shows that IRR and ARR were used to a less extent (2.48) and (2.44), NPV and PBP were used to a moderate extent (2.60) and (3.14) respectively; and profitability index was used to great extent (3.50). This response rate indicates that profitability index has a higher weight when used in the capital budgeting process. This study findings concurs with Graham and Harvey (2001) who expressed that the analytical techniques used by executives in capital budgeting have increased in terms of sophistication and the frequency of use by the Chief Financial Officers (CFOs), however, the study findings contradict this study that the NPV and IRR techniques were used to great extent as capital budgeting techniques.

## 4.7 Capital budgeting Practices influence on the Operation of Projects

Based on a five point scale 5 to 1 (5= most influential, 4= more influential, 3= moderate influential, 2 = less influential and 1 not influential); the researcher sought to establish how each of the capital budgeting practices influences the operation of the projects initiated by the local authorities. The table 4.7 below shows the response rate obtained from the field.

**Table 4.7 Capital Budgeting Practices influence on the Operation of Projects**

| Capital Budgeting Practice | 5 | 4 | 3 | 2 | 1 | Σ f | Σ wf | Σ wf/Σ f Weight Average |
|---|---|---|---|---|---|---|---|---|
| Internal Rate of Return (IRR) | 2 | 5 | 10 | 28 | 7 | 52 | 123 | 2.37 |
| Net Present Value (NPV) | 3 | 6 | 12 | 23 | 8 | 52 | 129 | 2.48 |
| Pay back Period (PBP) | 5 | 9 | 25 | 8 | 5 | 52 | 157 | 3.02 |
| Accounting Rate of Return (ARR) | 2 | 5 | 14 | 21 | 10 | 52 | 124 | 2.39 |
| Profitability Index (PI) | 7 | 22 | 11 | 7 | 3 | 52 | 173 | 3.33 |

Source field data (2010)

Table 4.7 above shows that IRR (2.37), NPV (2.48)  and ARR (2.39) were less influential and PBP (3.02) and PI (3.33) were moderately influential. Further PI is featuring again as one of the most influential capital budgeting practice used in the appraisal of projects. This study findings are consistent with Graham and Harvey (2001) who expressed that the analytical techniques used by executives in capital budgeting have increased in terms of sophistication and the frequency, the findings contradict this study  that the NPV and IRR techniques were used to great extent  as capital budgeting techniques because in this research the tools are  less influential. This findings are again consistent with a study done by Arnold and Hatzopolous (2000) and Graham and Harvey (2000) who identified the practical usage of investment appraisal techniques, their findings revealed that NPV and IRR are less behind its rivals Profitability Index and Payback period except ARR as is in this study.

## 4.8 Capital Budgeting Practices and Projects in the Local Authority

Based on the response rate from the field, the study sought to find out the number of projects that were initiated by the local authority in the last ten years since 2001 to 2010; and the number of projects in operation against each capital budgeting practice used. The table 4.8a below shows the response rate obtained from the field.

**Table 4.8a Capital Budgeting Practices and Projects in the Local Authority**

| Capital budgeting practice used | Projects initiated during the period (2001-2010) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
| Internal Rate of Return (IRR) | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 |
| Net Present Value (NPV) | 4 | 2 | 1 | 2 | 0 | 1 | 0 | 2 | 0 | 0 |
| Pay Back Period (PBP) | 3 | 2 | 5 | 2 | 4 | 0 | 3 | 0 | 0 | 0 |
| Accounting Rate of Return (ARR) | 1 | 1 | 4 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Profitability Index (PI) | 6 | 5 | 3 | 5 | 3 | 2 | 1 | 1 | 7 | 4 |
| Total projects implemented | 15 | 10 | 13 | 10 | 7 | 5 | 4 | 3 | 7 | 4 |

Source: field data (Kisii Municipal Council- 2010)

Form the table 4.8a above for the last ten years period, for example IRR had 2 projects, NPV 10 projects, PBP 19 projects, ARR had 7 projects and PI had appraised 37 projects. Based on the number of projects initiated by the local authority, the researcher sought to find out the number of projects that were in operation in the period 2001 to 2010. The response rate obtained from the field is as in the table 4.8b below.

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**Table 4.8b Number of Projects in Operation in the period 2001 to 2010.**

| Capital Budgeting Practice Used | Projects in operation in year 2010. |
|---|---|
| Internal Rate of Return (IRR) | 1 |
| Net Present Value (NPV) | 5 |
| Pay Back Period (PBP) | 7 |
| Accounting Rate of Return (ARR) | 3 |
| Profitability Index (PI) | 23 |

Source field data

Based on the information from table 4.8b above it shows that IRR had 1 project in operation, NPV 5 projects PBP7projects, ARR 3 projects and PI had 23 projects in operation. The researcher further sought to find out the proportion of the projects in operation against each capital budgeting practice for the period 2001 to 2010. The response rate obtained is as in table 4.8c below.

**Table 4.8 c Capital Budgeting Practices and Proportion of Projects in Operation**

| Capital Budgeting Practice | Projects initiated (2001-2010 ) | Projects in operation 2010. | Lost projects | %Proportion of projects in operation | %Proportion of projects lost |
|---|---|---|---|---|---|
| Internal Rate of Return (IRR) | 3 | 1 | 2 | 33% | 67% |
| Net Present Value (NPV) | 12 | 5 | 7 | 42% | 58% |
| Pay back Period (PBP) | 19 | 7 | 12 | 37% | 63% |
| Accounting Rate of Return (ARR) | 7 | 3 | 4 | 42.9% | 57.1% |
| Profitability Index (PI) | 37 | 23 | 14 | 62% | 38% |
| Total  Projects | 78 | 39 | 39 | | |

Source field data (2010)

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The table 4.8c above shows that majority of the projects initiated by the local authority during the ten year period 2001 to 2010 against the capital budgeting practice used. IRR lost 2 projects (67%), NPV 7 projects (58%), PBP lost 12 projects (63%), ARR lost 4 projects (57.1%) and PI lost 14 projects (38%) as compared to other practices. Despite the high proportion of the projects initiated by using the profitability index still the percentage of the projects in operation remains high. This study is consistent with Koller (2006) who expressed that capital investment decisions normally represent the most important decisions that an organization makes, since they commit a substantial proportion of a firms resources to actions that are irreversible; normally such investment will take more than one year period and those includes investments in plant and machinery, research and development, advertising and warehousing facilities.

## 4.9 Operation of Projects and provision of Services by the Local Authority

Using the five point scale 5 to 1 (5-to greater Extent, 4-greater Extent, 3-Moderate extent, 2-Less Extent  and 1- No Extent)  The study sought to find out the relationship between the operations of projects on the services provided by the local authority. On the basis of the statements in table 4.9 below this consequently summarizes the responses from the field.

**Table 4.9 Operation of Projects and Provision of Services by the Local Authority**

| Service provided by the Local Authority | 5 | 4 | 3 | 2 | 1 | $\Sigma$ f | $\Sigma$ wf$_i$ | $\Sigma$ wf/$\Sigma$ f Weight Average |
|---|---|---|---|---|---|---|---|---|
| Improved Clean water supply and sanitation services | 17 | 13 | 16 | 4 | 2 | 52 | 185 | 3.56 |
| Improved security and street lighting | 7 | 5 | 27 | 10 | 3 | 52 | 159 | 3.057 |
| Improved roads and other infrastructure  facilities | 9 | 23 | 11 | 8 | 1 | 52 | 187 | 3.596 |
| Improved service delivery to the business community in the municipality | 10 | 22 | 15 | 3 | 2 | 52 | 191 | 3.673 |
| Increased environmental responsibility. | 3 | 31 | 9 | 3 | 6 | 52 | 178 | 3.057 |

Source field data (2010)

From table 4.9 above, the operation of projects had influenced to a greater extent the services: clean water supply and sanitation (3.56), roads and other infrastructure facilities (3.596)

and the service delivery to the business community (3.673). The operation of projects had influenced to a moderate extent the services: improved security and street lighting (3.057) and environmental responsibility(3.057). This study findings is consistent the research done by The Institute of Economic Affairs (2005), which expressed that it is evident that local authorities are uniquely and strategically placed to act as a link between local and central government, between resources and needs, and between the governed and the governors.

This findings further concurs with research done by the Institute of Policy Analysis and Research (IPAR, 2004), the capital spending is generally about physical assets with a useful life of more than one year; including capital improvements or the rehabilitation of physical assets to extend the useful life of the asset to service delivery to the users of the facility. The local authorities make capital spending on the physical facilities with the aim of providing services within their areas of jurisdiction.

## 4.10 A regression analysis model

The study used the regression model y= a + bx, the variables were rearranged and calculated as in the table 4.10 below. The study analyzed the projects initiated and the revenue generated. The observation on the number of projects and revenue generated or collected is a function of operation of projects in the municipal council. Table 4.10 below indicates the number of projects initiated since the year's 2001 to 2010 and the revenue generated.

**Table 4.10 The Projects initiated and Revenue for the year's 2001 to 2010**

| Year of Observation | Projects Initiated $x_i$ | Revenue in (millions) $y_i$ |
|---|---|---|
| 2001 | 15 | 175 |
| 2002 | 10 | 182 |
| 2003 | 13 | 180 |
| 2004 | 10 | 183 |
| 2005 | 7 | 188 |
| 2006 | 5 | 200 |
| 2007 | 4 | 194 |
| 2008 | 3 | 206 |
| 2009 | 7 | 208 |
| 2010 | 4 | 219 |

Source (field data, 2010)

The regression equation $y_i$ **= 216.2326203 + - 2.914438503$x_i$** was developed using the data in table 4.10 above (Annex1). This indicates that the projects initiated overtime and the revenue collected have a negative relationship (- 2.914438503). The implication is that the more projects initiated does influence the revenue collected by the local authorities in Kenya. The parameters **a** and **b** in the regression equation were derived(Annex1) to estimate the true interval of parameters ά (alpha) and β (beta) and set the confidence limit. The results determined showed that the regression constant limits ranged between - 5.082854714 to- 0.746022291. The revenue collected or generated is dependent on the projects initiated because the coefficient from this equation is negative. Hence, the more projects initiated results in less revenue generated. The study further sought to establish the correlation between the number of projects initiated and the revenue collected in this study. The formula for the calculation of Pearson's correlation coefficient was used (Annex 1). The findings suggested that the degree of association between the projects initiated and the revenue collected by the local authorities is negatively strong as the correlation coefficient determined is - 0.827319414.

# CHAPTER FIVE

## SUMMARY OF THE FINDINGS, CONCLUSION AND RECOMMENDATIONS.

### 5.1 Summary of the Findings

The study found out that Internal Rate of Return (IRR) Net Present Value (NPV) Payback Period (PBP) Accounting Rate of Return (ARR) Profitability Index (PI) as capital budgeting practices were used by the local authority in project appraisal. This implies that Kisii municipal council do asses the capital projects based on certain baseline appraisal criteria. The study found that the practices were used to some varying extents, profitability index was used to great extent compared to other capital budgeting practices. The study further found that IRR, NPV and ARR were less influential and PBP and PI were moderately influential as investment appraisal techniques; PI is featured again as one of the most influential capital budgeting practice used in the appraisal of projects. The study found out that for the last ten years period, the practices approved 78 projects but PI had appraised 37 projects;  there was a disparity among the capital budgeting practices usage in the appraisal process but still PI had 23 projects in operation. Therefore these practices influenced the operation of projects initiated by the local authorities.

The study regression equation given by $y_i$   $= 216.2326203 +$   $- 2.914438503x_i$   indicated that the projects initiated overtime and the revenue collected had a negative relationship        (-2.914438503). The implication is that the projects initiated influenced the revenue collected by the local authorities in Kenya. The correlation coefficient **r** $= - 0.827319414$ suggested that the degree of association between the projects initiated and the revenue collected by the local authorities was negatively strong.

### 5.2 Conclusion

 In Kenya several economic stimulus programmes and ambitious infrastructure projects have been implemented across the country. The government's intention is to maintain a stable macro- economic environment through prioritization of key projects and efficient use of the available resources; all this depends on the effective and efficient use of the capital budgeting practices which do appraise the various projects. The application of Capital Budgeting Practices in project evaluation has proved more successful to some projects and not others that make some projects collapse a few years after implementation and subsequent operation indicating

that other steps in the capital expenditure process have been overlooked during the capital budgeting process. Therefore it is justifiable to conclude that implementation of approved LASDAP projects has been dogged by operational constraints and this can lead to resource loss.

## 5.3 Recommendations

The local authorities and the government at large should embrace the use of the capital budgeting practices in projects appraisal and implementation process and these practices have proved to influence the operation of the projects. To consolidate the fragile economic growth and return the country onto the vision 2030 growth trajectory, the projects should be geared towards inclusive and sustainable rapid economic growth. Policy priorities be centered on economic growth, equity and poverty reduction and extended into the attainment of millennium development goals through prioritization and allocation of budgetary resources.

## 5.4 Suggestions for Further Study

Researchers should explore more through the existence, direction and magnitude of discrepancies between planned and realized values and the impact of the deviations. Further the research can be done using experimental designs or observational studies that can involve observing an already existing situation; this can look into cohorts of projects in which the investigator may manipulate the independent variables and observe the outcome this can give the cause-effect analysis. This study was a survey; if a case study design is applied probably the result may be different. The sample size used in this study was small a further investigation should be done using a bigger sample size, this will give more reliable results with a close generalization to the population . Further investigations can be done across industries to uncover the similarities and differences when using the capital budgeting practices as investment appraisal tools. Moreover further research can be done using another research instrument like the interview schedule or open ended questionnaire as this may give more information on this field of study.

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# APPENDICES
## APPENDIXI
## QUERSTIONNAIRE FOR THE LASDAP COMMITTEE MEMBERS IN GUSII COUNTY COUNCIL.

----------------------------------------------------------------------

**1. Gender of the respondent**

Male ☐

Female ☐

**2. Age of the respondent**

20 to 30 years

30 to 45 years ☐ ☐

Above 45 years

☐

**3. Education level of the respondents**

Primary ☐

Secondary

Certificate ☐

Diploma ☐

Bachelor's degree ☐

Masters and above ☐

**4. Position held in the Kisii municipal by the respondent**

Executive member in the council committee's ☐

Council employee (Town Hall) ☐

Religious Organization representative to LASDAP ☐

Other Organizations representatives to LASDAP ☐

**5.** The Kisii Municipal Council involves Participatory Capital Budgeting process as an innovative practice among the LASDAP Committee members in the appraisal of projects initiated by the Kisii Municipal Council. (Please tick one)

| Statement | Yes | No |
|---|---|---|
| It enhances accountability and transparency in financial matters for projects. | | |
| Consultative Action and right choice of projects for service delivery. | | |
| Proper identification of project proportion implemented for implementation and operation. | | |

6. What kind of Capital Budgeting practice is used on the Appraisal of Projects Initiated by Kisii Municipal Council?

Internal Rate of Return (IRR)    ☐
Net Present Value (NPV)          ☐
Pay Back Period (PBP)            ☐
Accounting Rate of Return (ARR)  ☐
Profitability Index (PI)         ☐

7. In the last ten years (since 2001-2010), indicate the Capital Budgeting Practice that has been used by the Local Authority in project appraisal more frequently than others (Please tick one).

Internal Rate of Return (IRR)    ☐
Net Present Value (NPV)          ☐
Pay Back Period (PBP)            ☐
Accounting Rate of Return (ARR)  ☐
Profitability Index (PI)         ☐

8. On the 5-point scale below rate the Capital Budgeting Practices in terms of the frequency with which they are used in Capital Budgeting Process for the projects initiated by Kisii Municipal Council.

| Capital Budgeting Practice | To greater Extent (5) | Greater Extent (4) | Moderate extent (3) | Less Extent (2) | No Extent (1) |
|---|---|---|---|---|---|
| Internal Rate of Return(IRR) | | | | | |
| Net Present Value(NPV) | | | | | |
| Pay Back Period(PBP) | | | | | |
| Accounting Rate of Return (ARR) | | | | | |
| Profitability Index (PI) | | | | | |

**9.** On the 5-point scale below rate how each of these Capital Budgeting Practices influence the Operations of the Projects initiated by Kisii Municipal Council.

| Capital Budgeting Practice | Most Influential (5) | More Influential (4) | Moderately Influential (3) | Less Influential (2) | Not Influential (1) |
|---|---|---|---|---|---|
| Internal Rate of Return (IRR) | | | | | |
| Net Present Value (NPV) | | | | | |
| Pay Back Period (PBP) | | | | | |
| Accounting Rate of Return (ARR) | | | | | |
| Profitability Index (PI) | | | | | |

**10.** On the 5-point scale below rate the influence on the services provided by the operation of the projects initiated by Local Authorities in Kenya (Please Indicate one)

| Service provided by the Local Authority | To greater Extent (5) | Greater Extent (4) | Moderate extent (3) | Less Extent (2) | No Extent (1) |
|---|---|---|---|---|---|
| Improved water supply | | | | | |
| Renovation of public toilets | | | | | |
| Improved Infrastructure, connection and accessibility | | | | | |
| Improved security and street lighting. | | | | | |
| The net business benefits increases a innovation and vitality is increased | | | | | |
| The risks associated with making business investments are ignored | | | | | |
| Environmental responsibility increases | | | | | |

**11.** Please indicate in the table below the number of projects that were initiated and the revenue realized (generated) from the same projects over the last ten years.

| Year | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
|---|---|---|---|---|---|---|---|---|---|---|
| Number of projects | | | | | | | | | | |
| Total Revenue per year. | | | | | | | | | | |

**12.** Please indicate the Number of projects that were initiated by the Local Authority in the last ten years (2001-2010) and how many are in operation today against each capital budgeting practice used.

| Capital budgeting practice used | Projects initiated during the period (2001-2010) | | | | | | | | | | Number of projects in operation today (2010) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | |
| Internal Rate of Return (IRR) | | | | | | | | | | | |
| Net Present Value (NPV) | | | | | | | | | | | |
| Pay Back Period (PBP) | | | | | | | | | | | |
| Accounting Rate of Return (ARR) | | | | | | | | | | | |
| Profitability Index (PI) | | | | | | | | | | | |

### APPENDIX II:  Table 3.1 Target Population

| Respondents (members in LASDAP Committee) | Target Population |
|---|---|
| Council representatives in the 12 wards and    Members of the Town Hall Projects | 59 |
| Organized Groups/ Unions | 31 |
| Religious Organizations ( Churches and Hindu) | 16 |
| **TOTAL** | **106** |

**Source: Kisii Municipal Council Office (2010)**

# APPENDIX III

## The Map of the Area under Study.
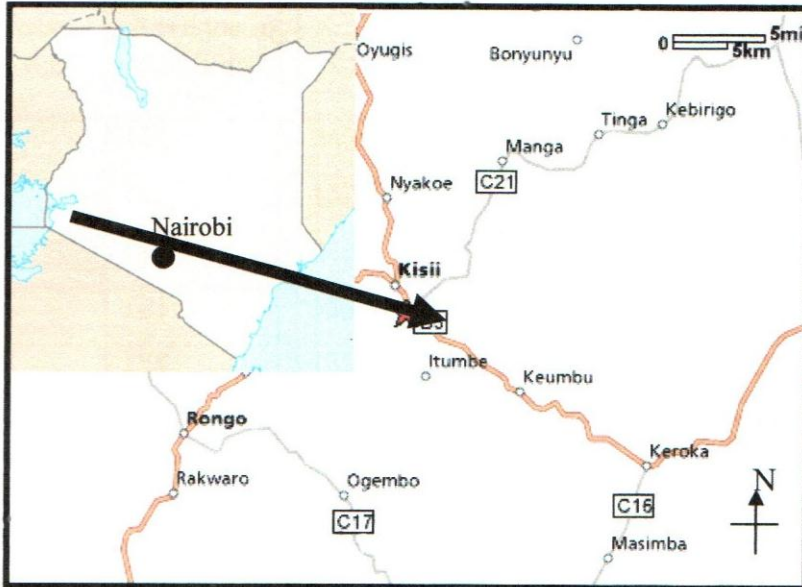


**Source: Kisii district - Information Center Office (2010)**

### The Projects initiated and Revenue generated

| Year of Observation | Projects Initiated $x_i$ | Revenue in (millions) $y_i$ | xy | $x^2$ | $y^2$ |
|---|---|---|---|---|---|
| 2001 | 15 | 175 | 2625 | 225 | 30625 |
| 2002 | 10 | 182 | 1820 | 100 | 33124 |
| 2003 | 13 | 180 | 2340 | 169 | 32400 |
| 2004 | 10 | 183 | 1830 | 100 | 33489 |
| 2005 | 7 | 188 | 1316 | 49 | 35344 |
| 2006 | 5 | 200 | 1000 | 25 | 40000 |
| 2007 | 4 | 194 | 776 | 16 | 37636 |
| 2008 | 3 | 206 | 618 | 9 | 42436 |
| 2009 | 7 | 208 | 1456 | 49 | 43264 |
| 2010 | 4 | 219 | 876 | 16 | 47961 |
| | $\Sigma x = 78$ | $\Sigma y = 1935$ | $\Sigma xy = 14657$ | $\Sigma x^2 = 758$ | $\Sigma y^2 = 376279$ |

The regression line $y_i = a + bx_i$ ;  Where

$$b = \frac{n \Sigma xy - \Sigma x \Sigma y}{n \Sigma x^2 - (\Sigma x)^2}$$

$$b = \frac{10(14657) - (78)(1935)}{10(758) - (78)^2}$$

$b = -2.914438503$

$a = \{\Sigma y / n\} - b \{\Sigma x / n\}$

$a = \{1935 / 10\} - (-2.914438503\{78 / 10\}$

$a = 193.5 + 22.73262032$

$a = 216.2326203$

The regression equation is given by $y_i = 216.2326203 + -2.914438503x_i$

To estimate the true interval of parameters ά (alpha) and β (beta) and set the confidence limit, the formulae:

ά (alpha) $= a + ts_a$

β (beta) $= b + ts_b$

where $s_a$ is the standard error of the intercept given by the equation:

$$S_a = \sqrt{\frac{S_e \, \Sigma x^2}{n \, \Sigma x^2 - (\Sigma x)^2}}$$

Where $S_e$ is the standard error of intercept given by :

$$S_e = \frac{\Sigma y^2 - a \, \Sigma y - b \, \Sigma xy}{n - 2}$$

to get $S_a$ the researcher has to determine $S_e$ first.

$$S_e = \frac{\Sigma y^2 - a \, \Sigma y - b \, \Sigma xy}{n - 2}$$

$$S_e = \frac{376279 - (216.2326203 \, (1935) - (-2.914438503 \times 14657)}{10 - 2}$$

$S_e = 585.80485/8$

$S_e = 73.2256$

To find $s_a$ (standard error of the intercept)

$$S_a = \sqrt{\frac{S_e \, \Sigma x^2}{n \, \Sigma x^2 - (\Sigma x)^2}}$$

$$S_a = \sqrt{\frac{73.2256 \times 758}{10 \times 758 - (78)^2}}$$

$$S_a = +0.157483289$$

$S_b$ is the standard error of the coefficient is given:

$$S_b = \frac{S_e}{\sqrt{(n-2)\Sigma x^2}}$$

$$S_b = \frac{73.2256}{\sqrt{(10-2) \times 758}}$$

$S_b = 73.2256 / 77.87168934$

$S_b = 0.940336605$

Subject the findings to a two tail t-test at 95%; it forms the $t_{\acute{a}}$ based upon (n-2) degrees of freedom and at the chosen level of confidence.

$\acute{a}$ (alpha) $= a + ts_a$

$\qquad = 216.2326203 + 2.306\,(0.157483289)$

$\qquad = 216.2326203 + 0.363156464$

$\qquad = 216.5957768$

$\acute{a}$ (alpha) $= a - ts_a$

$\qquad = 216.2326203 - 2.306\,(0.157483289)$

$\qquad = 216.2326203 - 0.363156464$

$\qquad = 215.864638$

But $\mathbf{a} = \mathbf{216.2326203}$

Therefore $215.864638 \leq a \leq 216.5957768$.

For $\beta$ (beta) $= b + ts_b$

$\qquad = -2.914438503 + 2.306\,(0.940336605)$

$\qquad = -2.914438503 + 2.168416211$

$\qquad = -0.746022291$

For $\beta$ (beta) $= b - ts_b$

$\qquad = -2.914438503 - 2.306\,(0.940336605)$

$\qquad = -2.914438503 - 2.168416211$

$\qquad = -5.082854714$

But $\mathbf{b} = -2.914438503$; therefore $-5.082854714 \leq \beta \leq -0.746022291$

The correlation between the number of projects initiated and the revenue collected. The formula for the calculation of Pearson's correlation coefficient was used:

$$r = \frac{n \Sigma xy - (\Sigma x)(\Sigma y)}{\sqrt{n \Sigma x^2 - (\Sigma x)^2} \; \sqrt{n \Sigma y^2 - (\Sigma y)^2}}$$

$$r = \frac{(10 \times 14657) \; - \; (78 \times 1935)}{\sqrt{10 \times 758 - (78)^2} \; \sqrt{10 \times 376279 - (1935)^2}}$$

$$r = \frac{146570 \; - \; 150930}{\sqrt{7580 - 6084} \; \sqrt{3762790 - 3744225}}$$

$$r = \frac{-4360}{38.67815921 \times 136.2534403}$$

$$r = -0.827319414$$