

**FACTORS INFLUENCING IMPLEMENTATION OF WATER  
INFRASTRUCTURE PROJECTS: A CASE OF LAPSSET AUTHORITY,  
KENYA**

**MURITHI FRANKLINE KABURU**

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## DECLARATION

This research project is my original work and has not been presented for any academic award in this university or any other institution of higher learning

**Signature:** .....

**Date:** .....

**Murithi Frankline Kaburu**

**L50/84207/2015**

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

**Signature:** ..... **Date:** .....

**Prof. Harriet Kidombo**

**Open, Distance and eLearning Campus**

**University of Nairobi**

## **DEDICATION**

I dedicate this research project to my wife Clare Juma and my son Liam Munene Kaburu and daughter Keana Kanini Kaburu for the continued support and motivation. I would also like to give a special dedication to my parents Joshua Murithi and Rose Kanini and brothers in recognition of your unwavering support and love.

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## **ABBREVIATIONS AND ACRONYMS**

<b>ADB</b>	African Development Bank
<b>IFPPP</b>	Infrastructure Finance and Public Private Partnerships Project
<b>KeNHA</b>	Kenya National Highway Authority
<b>LAPSSET</b>	Lamu Port South- Sudan, Ethiopia Transport Corridor
<b>MDGs</b>	Millennium Development Goals
<b>PPP</b>	Public Private Partnership
<b>PPPU</b>	Public Private Partnership Unit
<b>PSP</b>	Private Sector Participation

## ABSTRACT

Governments, NGOs, local and international organizations from all over the globe have implemented water projects to encourage safe rural water supply and sanitation in the past few years. The purpose of this study is to assess the factors influencing implementation of water infrastructure projects a case of LAPSSET Authority, Kenya. The study is guided by the following objectives: To establish the influence of financial feasibility on the implementation of water infrastructure projects a case of LAPSSET Authority, Kenya. To assess the influence of legal procedures on the implementation of water infrastructure projects a case of LAPSSET Authority, Kenya. To review the influence of stakeholder's engagement on the implementation of water infrastructure projects a case of LAPSSET Authority, Kenya. To assess the influence of project environment on implementation of water infrastructure projects a case of LAPSSET Authority, Kenya. The researcher looked at Financial Distress theory and Stakeholder Theory in the study. This study adopted descriptive research design. The study employed a questionnaire to collect primary data. The researcher dropped the questionnaires at the respondents' place of work. Validity and reliability of the study was measured. Data was organized mainly by use of inferential and descriptive statistics. Correlation analysis measured the strength of the relationship between the dependent variable and independent variables. From the findings, project environment ( $M=3.92$ ,  $p<0.05$ ), stakeholder engagement ( $M=3.82$ ,  $p<0.05$ ), financial feasibility ( $M=3.82$ ,  $p<0.05$ ) and legal procedures ( $M=3.80$ ,  $p<0.05$ ) all have significant effect on implementation of water infrastructure projects a case of LAPSSET Authority, Kenya. The study concludes that projects were audited annually, financial records were timely prepared and periodic budget was used on implementation of projects. LAPSSET Authority acquired for permits before project implementation, followed the funding policies enforced by the government and got licence approvals before implementing a project. LAPSSET had built trust with its stakeholders and considered the interest of the stakeholders. LAPSSET Authority allowed community members to participate in the conception and design of the projects and community members made contribution of cash for implementation of projects. LAPSSET project environment made project implementation to be successful and faster, project environment made it easy for use to follow the policies involved in the project implementation. The study recommends that policy makers should to ensure that their financial records are audited for transparency and accountability. Policy makers should to create a budget enough for project implementation. Policy makers ought to ensure that policies implemented protected the stakeholders. Policy makers should to build trust with its stakeholders and consider the interest of the stakeholders. Management of LAPPSET should to finish the project as per the speculated time, prepare financial reports and avoid misappropriation of funds. The management should to ensure that they had permits before project implementation, followed the funding policies enforced by the government. LAPSSET project environment should to make project implementation to be successful and faster. Project environment should to make it easy for use to follow the policies involved in the project implementation.

## **CHAPTER ONE**

### **INTRODUCTION**

#### **1.1 Background to the Study**

Water is a necessary natural resource for sustenance of human life, biological arrangements and a key resource to social and economic development. Governments, NGOs, local and international organizations from all over the globe have implemented water projects to encourage safe rural water supply and sanitation in the past few years (Ameyaw & Chan, 2015). However, these water infrastructures and water supply systems in most project areas lack of effective performance. One of the United Nation's 2000 SDG's is to increase the ratio of the world's population that has access to safe drinking water and basic sanitation (United Nations 2010). While the international community has made progress toward this goal over the past decade, progress in rural areas is slower compared to urban areas. Worldwide, 80% of the people who have inadequate access to drinking water supplies live in rural areas. Even where rural supply schemes are developed, many are in disrepair or not running properly (Aranda-Jan, Mohutsiwa-Dibe & Loukanova, 2014).

Over 1.2 billion people worldwide lack access to safe drinking water (World Bank 2010). In this regard, providing access to clean, affordable and accessible water is therefore a top global priority, World leaders at United Nations Millennium Summit in the year 2000 committed to Millennium Development Goals (MDGs); one of them being to halve the proportion of people without access to safe drinking water and sanitation by 2015. While worldwide access to clean drinking water has progressed enough to reach the MDG target, 780 million people remain without access to clean drinking water. Only 61% of the population in Sub-Saharan Africa has access to improved water supply sources. People lack proper services because systems fail, often because not enough resources are invested to appropriately build and maintain them, and also because of the stress that the fast-growing population places on the existing infrastructure (World Bank, 2010).

The World Health Organization (WHO) World Water and Sanitation Report (WHO, 2000) draws a distinction between practical sustainability and ecological implementation. Kimberly (1998) added that implementation rests on the capability to harness and sustain original project

functional values. Nonetheless, in order to accomplish this, it must be planned from the start of the project in order to guarantee the basics for lasting sustainability and plan to ensure the implementation of sustainable projects. Infrastructure Projects are implemented in order to provide economic services from utilities (like electricity, telecommunication and water) and transport (roads, bridges, seaport, and airports) and are central in promoting economic development (Lienert, Schnetzer & Ingold, 2013). Unsuccessful implementation of such projects therefore means that the enjoyment of such services and the corresponding economic benefits are delayed or never achieved.

Financing provides the monetary resources required to meet the project construction budget as represented by the project's bill of quantities. When the funds allowed for the project are short the contract time is extended, or scope decreased, or both. It is then imperative that investment and financing plans based on feasibility studies are made to enable adequate funding. Devarpiya and Ganesan (2017) obtains that poor financing arrangements, inadequate construction funding and budgets, bad cash flow that may be occasioned by contractor's and client's financial difficulties, and inaccessibility to formal structured finance have a heavy bearing on the project smooth running leading to delayed completion of a project. Baptiste, Foley and Smardon (2015) also identified financing as a major success criterion of construction projects.

Stakeholder's participation teaches communities how to resolve conflict and gives room for different perspectives heard. In this way, learning is encouraged and people are able to help themselves (Nampila, 2015). The stakeholders including the community are able to evaluate their own situation, organize themselves as a powerful unit and work creatively towards the implementation of the project. These improved capacities of people allow communities to mobilize and help themselves to minimize reliance on the state and leads to a bottoms-up approach. Legal issues are set provide useful insights to the government and the development partners on how to accomplish the timely completion of projects and therefore help in formulating strategies to address these factors (Yeoh & Popovič, 2016).

### **1.1.1 The Lamu Port South- Sudan, Ethiopia Transport Water Project**

The Lamu Port South- Sudan, Ethiopia Transport (LAPSSET) Corridor Program is a regional multi modal infrastructure program integrating roads, railway and pipeline components in

Kenya, South Sudan and Ethiopia (Copeland & Kvelland, 2013). The program is the single largest project of its nature in Eastern Africa and is intended to provide seamless connectivity, enhance trade and logistics within the region by providing an alternative and strategic corridor to serve the landlocked neighboring countries of Ethiopia and South Sudan (Letai & Tiampati, 2015).

The Sh900 million Isiolo Phase Two water project has been completed and handed over to the county government. The project started in 2011 and was implemented by the Northern Water Services Board. It was funded by the national government and the African Development Bank. The project would supply 6,500 cubic metres of water per day to 60,000 people in Isiolo. It would provide water for the various Vision 2030 flagship projects such as the airport, abattoir, resort city, refinery and Lapsset projects (Goldsmith, 2013). Apart from the trunk infrastructure, it is designed to encompass other investment and economic activities such as International Airports, Resort cities, Special Economic Zones, Industrial parks, and mineral exploration to generate and harness the economic and business activities for the corridor to bolster the viability of the investment and overall program sustainability.

## **1.2 Statement of the Problem**

Delays in completion of infrastructure development projects during implementation continue to pose great challenges to our country (Mir & Pinnington, 2014). The Kenyan Government has invested heavily and continues to invest in water infrastructure projects. Despite the importance of infrastructure and the huge financial resources committed to it, the intended benefits are partly or never realized due to many unsuccessful or delayed project completions. Consequently, this has a negative effect because delayed completion of projects results to; cost overruns, disputes, litigation and sometimes complete abandonment of important projects. Secondly, project beneficiaries are deprived of the benefits that would have otherwise accrued from timely completion of the projects (Ram, Corkindale & Wu, 2013).

Delays in completion of water projects in Kenya are a common phenomenon. According to AWSB's year 2013 achievement report to WASREB for example; 9 of 16 (57%) completed projects in the board's area were completed late while 12 of 14 (86%) ongoing projects were behind schedule. According to MWI, Annual Water Sector Review Report 2012; poor site management and supervision of projects, lack of elaborate monitoring system to inform on the

status of ongoing projects, financing challenges and contract variations are key contributory factors to this phenomenon. While overall national water supply coverage despite this phenomenon has steadily increased over the recent years reaching a level of 60% and 45% in urban and rural areas respectively (MWI, Annual Water Sector Review Report 2012), a gap of 20% and 30% respectively needs to be closed to reach the sector's National Water Services Strategy target coverage of 80% in urban areas and 75% in rural areas by 2015 (NWSS, 2004)

Several studies have been conducted on the factors influencing implementation of water infrastructure projects. For instance, Peter and Nkambule (2012) investigated the factors affecting sustainability of rural water schemes in Swaziland. The results indicated technical and social factors as most critical while financial and institutional, although important, played a lesser role. Factors which contributed to the sustainability of water schemes were: functionality; design flow; water fetching time; ability to meet additional demand; use by population; equity; participation in decision making on operation and maintenance; existence of fund for operation and maintenance; willingness to contribute money; existence of a user's committee; participation in the initial planning and design of the water scheme; and coordination between the local leaders and user's committee. The main factors which made the schemes unsustainable were: long fetching time; non-involvement in decision making; lack of willingness to contribute funds; absence of users committee; and lack of cooperation between local leaders and the users committee. Water service providers should address the technical, social, financial and institutional factors identified affecting sustainability in their planning and implementation of rural water schemes. This study was done in Swaziland, a different contextual framework from the Kenya setting. Therefore, the findings might not be applicable in the current study.

Ndung'u, (2017) conducted a study on the factors influencing sustainability of water projects in schools. The findings of the study indicated that community participation, level of education, management skills and follow up support do influence sustainability of school water projects. The study recommends that beneficiary involvement is key to sustainability, project designers should ensure there is a check list to check and ensure beneficiaries are involved adequately at all project stages and community participation in the whole project cycle be enhanced, there should be an analysis of capacity needed for the community to run a project without external help and as such sustain project benefits. This study concentrated on schools only, therefore

the findings might not be applicable in the current study. This led to knowledge gap that the study intended to answer the factors influencing implementation of water infrastructure projects a case of LAPSSET Authority, Kenya.

### **1.3 Purpose of the Study**

The purpose of this study was to assess the factors influencing implementation of water infrastructure projects in LAPSSET Authority, Kenya

#### **1.1.3 Objective of the Study**

The study was guided by the following objectives:

- i. To establish the influence of financial feasibility on the implementation of water infrastructure projects.
- ii. To assess the influence of legal procedures on the implementation of water infrastructure projects.
- iii. To review the influence of stakeholder's engagement on the implementation of water infrastructure projects
- iv. To assess the influence of project environment on implementation of water infrastructure projects

### **1.4 Research Question**

The study was guided by the following research questions;

- i. What is the influence of financial feasibility on the implementation of water infrastructure projects?
- ii. What is the influence of legal procedures on the implementation of water infrastructure projects?
- iii. What is the influence of stakeholder's engagement on the implementation of water infrastructure projects?
- iv. What is the influence of project environment on implementation of water infrastructure projects Significance of the Study?

## **1.5 Significance of the Study**

This study is important to the LAPSSET Authority; Kenya as it would help them understand how implementation of projects on schedule, scope and within the budget helps the projects outputs well positioned in the market, increasing competitiveness and product margins. If the project operating results are unsatisfactory, the management can go back to the drawing board reformulate its plans, and develop more reasonable targets for future periods. LAPSSET Authority officials as well as other NGOs and donors may use the findings to strengthen their financial and community participation practices to enhance achievement of objectives thus making them more effective. The government may also use the findings together with others from similar studies to enlist the support of LAPSSET in carrying out interventions and other community support projects

To the policymakers the study may provide useful information on the key factors influencing the implementation of water projects and thus help in formulating better strategies and regulatory tools to enhance efficiency and effectiveness in the implementation of water projects.

Project contractors and clients may find the findings of this study a useful source of information on what factors they need to closely focus on in order to ensure delivery of projects within the stipulated time.

For future researchers and academicians, the findings of this study may provide useful material for other related researches as well as providing reference material on what factors need to be considered for successful implementation of water projects in Kenya.

## **1.6 Delimitations of the Study**

The survey covered the factors influencing implementation of water infrastructure projects. The study interviewed project managers, finance managers, stakeholders and beneficiaries in LAPSSET authority. Questionnaires was used as the main data instrument source where it was distributed to the targeted respondents. The data for analysis was collected to a population of 198 respondents within head offices in Nairobi.



## **1.7 Limitation of the Study**

The researcher encountered various limitations that hindered access to information that the study sought. The main limitation of study was only limited to LAPSSET projects without focusing on PPP projects in other ministries. The study covered more PPP projects across all government ministries so as to provide a more broad-based analysis. The respondents targeted were reluctant in giving information fearing that the information was used to intimidate them or print a negative image about them, the ministry or the process used in PPP. The researcher handled the problem by carrying an introduction letter from the University and assured them that the information that was treated with confidentially and it was used purely for academic purposes.

## **1.8 Assumptions of the Study**

This study assumed that the selected sample represent the population in all the variables of interest and that respondents were willingly to give the information freely without fear. It was also assumed that all the questionnaires were returned on time and that those interviewed were available and willing to participate and provide honest, accurate, complete answers, and that the researcher would have adequate time to complete the study.

## **1.9 Definition of Significant Terms**

**Financial feasibility** – This is the assessment of the financial aspects of the project and it covers the budget, revenues, investment returns, and supply of funds and management of supply chains in the LAPPSET projects.

**Legal procedures** – This are legal question which is the foundation of a case involved in implementation of projects. They cover the policies that govern funding and partners, the level of bureaucracies, contract awards and other principles within the LAPPSET projects.

**Project Environment** – The external and internal surrounding that which the project operates on. Project environment covers aspects like the mitigation and adaptation policies, availability of resources,

project design and interests of various stakeholder's involved in the LAPPSET projects.

**Stakeholder's engagement** - is the process by which an organisation involves people who may be affected by the decisions it makes, or can influence the implementation of the project. It aims at ensuring a high level of customer satisfaction, involvement and awareness besides seeking contribution from community members and disclosing all the required information in the LAPPSET projects.

**LAPPSET Authority** – LAPPSET stands for Lamu Port-South Sudan-Ethiopia-Transport. As an authority, it is charged with the responsibility of planning, coordinating and managing the implementation of the Lamu Port-South Sudan-Ethiopia Transport Corridor.

### **1.10 Organization of the Study**

The research was organized in five chapters. Chapter one focused on the research and presents the statement of problem, objectives, and research questions. The chapter also shows the significance, limitations and delimitations of the study. Chapter two encompassed the literature review on the various aspects factors that affect project selection in public private partnership funding arrangement. Chapter three discussed the methodology that was used to collect and analyse data while showing the target population, the sample population and the data collection instrument. Chapter four presented the results of the survey and it also contain the analysis of data and presentation of the information collected via mean, standard deviation. Chapter five contained the summary findings, discussion, conclusion and recommendations of the results that was obtained from the data analysed and the information gathered in chapter four.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

This chapter outlines various contributions from scholars on factors influencing implementation of water infrastructure projects a case of LAPSSET Authority, Kenya. The chapter is structured into concept of funding of implementation of water infrastructure projects, financial feasibility, legal procedure, stakeholder engagement, project environment, the theoretical and conceptual framework and the summary of literature. The chapter also presents; literature review, conceptual framework, and finally summary and research gaps that the study was aiming to bridge.

#### **2.2 Implementation of Water Infrastructure Projects**

A project is deemed to be successfully implemented if it is completed within the stipulated timeframe and budget. Projects are usually designed to be accomplished within a given stated time horizon (Pohlner, 2016). It is the responsibility of project managers to ensure that projects are completed within the established time. At the same time, a successfully implemented project should meet the needs and wants of the end users. This is an important aspect because it relates quality in the implementation of projects (Wilcox, Nasiri, Bell & Rahaman, 2016).

Implementation of projects requires financial resources, a high level of involvement of all the stakeholders, a critical analysis of the environment and the legal obligations to be adhered to in the process (Furlong, De-Silva, Guthrie & Considine, 2016). The water projects managers should therefore coordinate for various sources of funds from partners and donors to ensure smooth running of the operations and activities involved in the projects. Financial infeasibility would negatively influence implementation of different projects as the various activities would not be fully accomplished within projects (Poff, Brown, Grantham, Matthews, Palmer, Spence & Baeza, 2016).

#### **2.3 Financial Feasibility and Implementation of Water Infrastructure Projects**

Financing projects has been a major concern since infrastructure projects offer the main platform for attainment of the development objectives. In view of the limited resources, private

sector has turned to be the alternative source of finance to be used to finance the gaps. The role of public infrastructure is to reduce poverty, distribute wealth and improve economic growth. In the previous years, infrastructure financing has been linked with non-economic and institutional factors which directly influence the country risk (Hwang, Zhao & Gay, 2013). However, more recently, private financing has been considered as a potential alternative for developing public infrastructure.

Anyango (2013) conducted a study on Factors determining project implementation of health projects in Gedo Region, Somalia. The study found that there was enough financial support for project implementation at World Vision Somalia thus effective project implementation since finances are essential in the running of a project initiative in terms of facilitating execution of implementation tasks. It found that making allowances for adequate monitoring and evaluation gives the project manager and field officials the ability to anticipate problems, to oversee corrective measures, and to ensure that no deficiencies are overlooked thus resulting in effective project implementation. The study recommends that World Vision should improve integrated communications plan to improve project implementation. The organization should allocate sufficient funds to projects and ensure there is independency in utilization of the funds.

Kikui (2015) investigated the determinants of successful implementation of water and sanitation projects in Kenya, A case of informal settlement in Mombasa County, Kenya. Based on the findings of the study, the researcher recommended that: there should be sufficient funds allocated to the projects by the donors, national government, county government and other stakeholders; there should be an integrated M&E process with set policies and regulations to take care of the whole process of the implementation of WS projects; the politicians to have a positive perception about the slum dwellers and give them priorities in passing laws, allocating finances and allocating major projects o these areas that aim at addressing the WS issue; and finally the researcher recommends that, the companies operating in providing the WSS in the slums should not only focus on the profits they make but also should consider the welfare of the locals.

Besides being an alternate source of funding, private financing is also seen as having more advantages than public financing, particularly in terms of improving projects value-for-money, shortening the delivery time and reducing the project costs (Perez-Pineda & Quintanilla-Armijo, 2013). This sort of arrangement has been applied in many parts of the world in different

types and variants. The most common type is usually called as Public-Private Partnership (PPP), while in some Commonwealth countries such as UK and Malaysia it is more popularly known as Private Finance Initiative (PFI). In other countries, the arrangement is also often called as Private Participation in Infrastructure (PPI), Private Sector Participation (PSP), Privately-Financed Projects (PFP), P3 or P-P Partnership (Liu, Zang, Tian, Liu, Yang, Jia & Zhang, 2013).

Leveraging private sector financing through PPPs is one option that is increasingly being pursued to help address the infrastructure gap. Arguably private sector participation in infrastructure can bring experience, efficiency and finance in providing quality infrastructure services at better value for money than traditional government procurement (Gurung, Stewart, Beal & Sharma, 2016). Numerous instances where the public and private sectors have joined to address a key infrastructure constraint have proved successful for all parties. The public sector is able to transfer risks to the private sector and reduce the overall amount of public funds necessary to complete the project, while the private sector accesses a commercial market with the potential for attractive financial returns (Grimsey & Lewis, 2017).

In developed countries there is ample evidence on the efficiency role of the private sector. Arthur Andersen and LSE (2013) evaluated 29 projects in the UK that are already in operation, a third of all PPPs in the UK at that time, showed that the average percentage of estimated saving (against a public sector comparator) was 17%. Risk transfer accounted for 60% of forecast cost savings. Additionally, the National Audit Office in the UK in 2003 examined construction performance in 37 UK projects compared to projects built by the public sector. The results show 80% of PPP/PFI deals delivered price certainty; small price increases were evident in 20 percent of deals; 73 percent of publicly built projects experienced significant cost overruns; and 66 percent of PPP deals delivered on time compared to 30% for those publicly built. Furthermore, the motorway in Finland between Helsinki and Lahti was built five years earlier than expected and at lower cost. Finally, figures published by the European Construction Industry Federation (FIEC) in December 2010 state that the global savings of PPPs is estimated around 25% compared to classical procurement (Nickel, Schoenfelder, Medearis, Dolowitz, Keeley & Shuster 2014). This evidence on sound performances of private participation should not be regarded without recognizing the critical role of a strong enabling environment.

Water projects in the UK make up 10–15% of public's sector investment, and account for 20% and 15% of Spain's and South Korea's infrastructure investment respectively. Notably, while PPPs can in fact be instrumental in accelerating development, they also present a new set of challenges for the public sector. For example, bringing the private sector in as investors and operators requires governments to adjust and implement policies that enable a systematic, consistent, coherent and effective framework for private sector entry, operation and exit. Pakistan has developed PPP program under the framework of Infrastructure Project Development Facility (IPDF) (ADB, 2008). A framework on infrastructure water project has been issued by the Government of Indonesia in 2005 and some projects have been offered to the private sector (Wibowo, 2016). All of these developments raise some expectations for positive progress towards infrastructure improvements in those countries, although some issues in government's credibility and transparency (Beh, 2015), and government's capacity (ADB, 2008) are still potentially decelerate the process, and most of those can be referred to the issue of accountability.

Many countries across the world have used private sector participation in road infrastructure development. This is evidenced by the private participation in infrastructure (PPI) project database, which provides data for various infrastructure projects undertaken in 139 low- and middle-income countries in the developing world. Database covers PP projects in energy, telecommunication, transport, water, and sewerage sectors that reach financial closure and where the private entities have at least 15% ownership.

In the Sub Saharan Africa region, six countries are reported to have had private sector participation in road infrastructure development in the period 1990-2013 (Oguso, 2013). South Africa has the highest number of PPP road projects followed by Zimbabwe, which has two PPP road projects; Kenya has no PPP project during the period of review. Below is a figure showing projects in the Sub – Saharan countries.

The infrastructure deficit estimated for sub-Saharan Africa (SSA) is substantially higher than what domestic resources can meet (Foster, Vivien & Cecilia, 2016). The finance required to raise infrastructure in SSA to a reasonable level within the next decade is estimated at US\$93 billion per year, about 15 percent of regional GDP. This estimate covers the Information and Communications Technology (ICT), irrigation, power, transport, and water supply and sanitation sectors. Two thirds of this amount are needed for capital expenditures and one-third

to operate and maintain the infrastructure assets. Of the total required amount, the existing spending on infrastructure is estimated at US\$45 billion per annum, of which around US\$30 billion is financed by the African taxpayers and infrastructure users and US\$15 billion is from external sources. Successful projects, such as telecom investments in SSA or toll roads in South Africa, hold the promise that PPPs can assume a significant role in solving Africa's infrastructure deficit. However, it should be noted that providing the bulk infrastructure within a country would remain a government responsibility (Hering, Waite, Luthy, Drewes & Sedlak, 2013).

After accounting for potential efficiency gains that could amount to US\$17 billion, Africa's infrastructure funding gap still remains around US\$31 billion a year. While the infrastructure needs for each of the SSA countries varies greatly, there is little doubt that the general shortfall in infrastructure services hampers economic growth by hindering productivity, increasing the costs of doing business, and isolating markets (Briceño, Cecilia, Karlis & Foster, 2018). Public sources continue to finance the majority of these investments, but governments across the continent are increasingly realizing that these resources are insufficient to finance the level of investment required to close the infrastructure deficit.

According to the Africa Infrastructure Country Diagnostic Country Report (Zambia 2010) produced by the World Bank, Zambia needed to spend US\$1.6 billion a year over the decade 2006-2015 to develop its infrastructure to the level found in the rest of the developing world. This would be equivalent to 20% of Zambia's GDP and it is about double the country's rate of investment in recent years. The report thus estimated Zambia's infrastructure funding gap at US\$500 million per year (6.5% of GDP) for the ten years from 2006 to 2015. Closing the gap required raising more funds and looking for more effective ways to meet infrastructure targets, stated the report. PPPs could play a role in mitigating the funding requirements. By allowing the private sector to invest their own resources in the development of public infrastructure facilities through PPPs, Government can have access to private capital and speed up the delivery of public infrastructure. Mobilizing private sector resources in infrastructure development would help Government free up public funds for other socio-economic activities.

According to Djukic, Jovanoski, Ivanovic, Lazic and Bodroza (2016), most governments in SSA spend about 6 to 12% of their GDP each year on infrastructure. Approximately half of the countries spend more than 8 percent of GDP while a quarter of countries spend less than 5%

most countries in the region spend less than US\$600 million a year on infrastructure services or equivalently less than US\$50 per person. While these fiscal commitments seem large when expressed as a share of GDP compared to the actual nominal investment values, they are small when placed in the context of the amounts needed. Infrastructure data from the AICD reports for the 5 countries, that is, Côte d'Ivoire, Ghana, Kenya, Nigeria, and Senegal highlight existing inefficiencies and infrastructure funding gaps. From the report Kenya exhibits the lowest levels of infrastructure inefficiency waste, totalling US\$230 million per annum (0.8% of GDP), the country's funding gap is the highest among all five countries marking US\$2,094 million (7.0% of GDP).

Government of Kenya (GOK) has made infrastructure development through PPPs a priority as a mechanism that can help it address the major infrastructure gaps in the country (Hassanali, 2009). According to the Ministry of Roads Service Charter (2018) there is a need for improvement of roads to a better condition because the road transport (mode of transport) carries about 80% of all cargoes and passengers in the country. Due to the importance of roads in socio-economic development of the country, the government has in the recent past steadily increased budget allocation to the road sub-sector. Undoubtedly, reliable, efficient infrastructure is crucial to economic and social development and the promotion of pro-poor growth. Poor infrastructure impedes a nation's economic growth and international competitiveness. The Kenya Vision 2030 recognizes the fact that, the adequate supply of infrastructure services is an essential ingredient for productivity and growth (Wasike, 2014). To date, only Kenya pension funds have been indirectly involved in infrastructure financing through investments in the bond issuance of Kenya Electricity Generating Company (Kengen) and in the telecom company Safaricom.

#### **2.4 Legal Procedure and Implementation of Water Infrastructure Projects**

The vital role of the public sector and the lengthy time frame of infrastructure projects can make policy discontinuity a serious challenge. It is always possible that the policies, regulations, and political would undergird a project when a new administration comes into power or even when a new minister or other public official takes office within the same administration. Fortunately, Africa has seen some project success stories, such as the Cenpower Kpone IPP deal in Ghana, which survived four changes of minister (Ameyaw & Chan, 2015).



In Kenya, legal issues are addressed at a more individual institutional level. Kenya has three road agencies while other countries have one key road agency each. In Kenya, the government has established Kenya Roads Board (KRB) in 1999 to oversee development and maintenance of the country's road network (Kenya Road Boards Act, 1999) It was later enacted in 2007 to create three road agencies, which include Kenya National Highways Authority (KeNHA), and Kenya Rural Roads Authority (KURA) and Kenya Rural Roads Authority (KeRRA). The agencies described above are mandated to develop and maintain major highways, urban roads and rural roads respectively. In comparison other countries such as South Africa, Brazil and India have one key road agency each (Lienert, Schnetzer & Ingold, 2013).

Kenya enacted the PPP Act in 2013 to strengthen the environment for implementation of PPP projects in the country. Various laws currently govern the PPP project in the country. They are PPP Act of 2013, and Public Road Toll Act, Cap 407 Laws of Kenya (Republic of Kenya, 2012a). On the other hand, the countries have had over a decade of implementation of the PPP scheme on road development, with all of them having their first PPP road projects under respective PPP laws in the 1990s. The countries have developed various regulations for the implementation of the PPP road projects at both the national and local government level. For instance, in South Africa, the legal framework for PPPs at the National and Provincial levels is provided by the Public Financial Management Act of 1999, while the municipal PPPs are government under the Municipal Finance Management Act of 2003 and its regulation and Municipal Systems Act of 2003. In Brazil, the Brazilian PPP law 11.079/04 establishes general rules for competitive bidding, and contracting private partners at both the National and Sub – National levels. However, Kenya is yet to develop the regulations for the county governments (Verweij & Gerrits, 2015).

In addition, there are other countries that have formulated toolkits for projects which cover different sectors of the economy. The toolkits are tailor made to suit the unique description. In such toolkits, they have established risk allocation framework, for the PPP projects. In Kenya, a risk allocation framework and well as Public Private Partnership Manual are yet to be developed. Queiroz (2014) has given an overview of the areas which risk factors are allocated to the private sector. They include change in general regulations, financial risks, structure design, construction process, time and cost overruns, default risks, operations and maintenance risks, and lastly risks associated with force majeure. The public sector on the other hand is

allocated with risk on land acquisition, resettlement, licence approvals, and acquisition of permits, change in scope of work, political and local government support, delay in notification, of toll collection, and non-insurable force majeure events. Lastly there are few risks associated with construction cost financing, regulation of toll rates and traffic incident management whose risk cut across all parties (Schweizer, Renn, Köck, Bovet, Benighaus, Scheel & Schröter, 2016).

## **2.5 Stakeholders Engagement and Implementation of Water Infrastructure Projects**

Companies pursue relationships with other companies to obtain the benefits associated with reducing their costs or increasing their revenues. By entering into relationships, organizations hope to gain stakeholder satisfaction and loyalty while stakeholders look for quality (Evans & Laskin, 2014). Kakabadse. (2015) in the extensive review on the stakeholder approach expressed that corporate social responsibility (CSR) and stakeholders' interests are partly related to each other. In line with this, Hillman (2014) noted that a firm has relationships with constituent (stakeholders) groups and the processes and outcomes associated with these relationships depend on the interest. The interests of all legitimate stakeholders have value and the focus of stakeholder theory is on managerial decision making. Kakabadse (2015), therefore, concluded that managers should pay attention to stakeholders.

Fulton, Jones, Boschetti, Chapman, Little, Syme and Mare (2013) investigated the impact of stakeholder engagement in management strategy evaluation. The study indicated that the numbers of people, level of interaction, and amount of information exchanged are likely to lead to chains of events going. In various infrastructure projects, many community protocols are used by the communities in negotiations with other (usually more powerful) stakeholders, e.g. over proposed large-scale developments. The negotiating processes are a lot more often referred to as 'multi-stakeholder processes' (MSPs). Some cases there is a formal platform, or common space, that is collectively owned by all the stakeholders, where negotiations can take place; In others, the stakeholders do not all meet in one place but are still engaging in various ways. Therefore, it is important to analyse the interests of stakeholders and the power dynamics operating in order to have a successful project developed.

In projects that involve government and other interest parties, there is a greater need to have a common synergy, where synergy is described as the advantage that partnerships gain by involving diverse people and organisations in the community (Mok, Shen & Yang, 2015). The absence of synergy in various projects across the world has resulted to various conflicts and acrimonies which may result to jeopardising the chances of achieving successful PPP project. Organisations that involve stakeholders and considering the process as only public relations activity do not understand the intricate contributions that come with activity. It is therefore important that, they the stakeholders understand the environment to which strategies are implemented and can only be understood in depth by the people who are affected or not affected directly by the strategies (Lienert, Schnetzer & Ingold, 2013). Paris (2013) intimates that the stakeholders' involvement in the strategic planning creates external advocacy for the organisation.

Therefore, the fundamental question to stakeholder's engagement is how to evaluate their engagement. There are three main aspects to which an organisation can involve different stakeholders they include, quality and extent of engagement, cost and benefits of engagement, impact, performance, outcomes and sustainability (Akhmouch & Clavreul, 2016). DFID (1995) outlines the importance of considering the quantitative, qualitative and time dimensions of participation. The qualitative dimensions of involvement should also be evaluated as performance is dependent on empowering participants to take on greater responsibility and control.

However, there are still reasons as to why a stakeholder may be involved or not. These emanates from their understanding of the benefits that would accumulate thereof (Clever, 2018). A variety of stakeholders do have different abilities to meaningfully participate. In most cases, trust has been considered to enable open discussions thereby enhancing collaboration which is an important factor to be considered to facilitate effective stakeholder involvement (Pahl-Wostl, 2015). Trust in most cases does grow from low to high as conversations continue. The trust attributes to be considered are openness, reliability, and transparency. Some other considerations are capability of participants/stakeholders, ability, competency, knowledge, skills, local conditions, and cultural settings where culture is considered as the shared norms, traditions of a group and practices.

## **2.6 Project Environment and Implementation of Water Infrastructure Projects**

A lot of projects experience different environments which bring about special challenges for project managers. Most of these challenges may lead to extensive cost and time overruns even before the commencement of the project itself. The challenges are likely to arise from mainly from inherent risks like political instability, inadequate infrastructure, difficult contract procedure, lack of power supply and communication infrastructure. In respect to these unique problems, various research studies have indicated that there is need to develop appropriate techniques and management procedures that are specially tailored to the project environment in developing countries (Faniran 2014).

Most of the environmental factors identified include and are not limited to physical infrastructure, political, financial, legal, institutional, economic, technological, cultural, and sociological (Walker, 2013). The four most important external environmental issues in decreasing order include, government policy, community issues, economic situations, and weather conditions (Ajayi et al, 2004). On the other end, project performance can be evaluated using a large number of performance indicators that could be related to a variety of groups such as quality, client changes, health and safety, cost among others (Ranger, Reeder & Lowe, 2013). In engineering for instance, the accepted practice is such that designs need to be overly estimated and must account for possible forces of the environment to efficiently factor in safety and ensure that the project is designed to be safe and reliable throughout its lifetime. In management practices, project longevity are inherent best practices. Equipment's to be used must withstand severe weather and other influences. Stressors in environment such as those that could arise from as a result of climate change, seismic events, fires, would more adequately be addressed by the kind of materials used, engineering design and engineering foresight.

Similarly, issues of climate change need also to be acknowledged. In essence, climate change is climate that has been documented over two or more periods, each with a minimum of 30 years (Catto, 2016). According to Intergovernmental Panel on Climate Change (IPCC), climate change is defined as change in the state of the climate that can be identified using either statistical tests or any other test whereby there are changes in the outcome of the evaluation which can be either extended periods that are typically longer or shorter. Typically, climate change may be due to natural internal processes or external forcing, or to persistent anthropogenic changes in the composition of the atmosphere or in land use (IPCC 2012).

The United Nations Framework Convention on Climate Change (UNFCCC) makes a distinction between climate change attributed to human activities and climate variability attributable to natural causes, by defining climate change as a change of climate directly or indirectly attributed to human activity that alters the composition of the global atmosphere, and which is in addition to natural climate variability observed over comparable time periods (IPCC, 2007). The definition of climate change dictates the context in which the effects of those changes are discussed.

While it is appropriate to examine the effects of projected climate change on the Project over the next 50 to 100 years through the Operation and subsequently into Post-Closure of the Project, it is not fitting to consider the effects of climate change projections on Construction which would take place over a relatively short period of time in the near future. Construction would occur over the first two years of the Project, and thus rather than considering the effects of long-term climate change on Construction, it is more appropriate to consider the effects of recent climatologically conditions, especially the potential adverse effects of weather variability and weather extremes (e.g., change in precipitation) during Construction (Bal, Bryde, Fearon & Ochieng, 2013).

As a strategy and a practice in project design, mitigation strategies have to be incorporated in order to significantly reduce environmental effects to this project. In the planning process, the application of engineering design codes and standards, construction practices, and monitoring must be conducted.

## **2.7 Theoretical Framework**

### **2.7.1 Financial Distress Theory**

This theory is characterized by decline in the firm's performance, value and failure (Opler & Titman, 1994). Organizations with projects that are supposed to yield profits have to ensure their projects perform as per expectations. Projects for profits should first recoup the initial capital invested then yield profits. This theory is important when addressing financial challenges affecting the successful performance of organizations. Financial management practices have a gap as they do not operate within budgets have weak internal controls; they do not follow their financial policies and audit their accounts. The major challenge of this theory

is it cannot recognize symptoms of failure early enough in order to make corrections. The performance of projects has been declining and there is need to track and ensure they improve. This theory is focus on the performance of firms which leads to the second research question which focuses on how financial management practices affect the successful performance of the projects.

This theory was relevant to the study because it helped in linking financial feasibility and implementation of water infrastructure projects. According to the theory, a negative relationship is expected between poor financial feasibility and the implementation of water infrastructure projects.

### **2.7.2 Stakeholder Theory**

Stakeholders of project can be internal (owners, customers, employees, and suppliers), and external (governments, competitors, consumer advocates, conservationists, broadcast/social media, among others) (Laplume, 2008), and Freeman (1984), describes these actors as any group or individual who can affect or is affected by the achievement of the organization's objectives. According to Freeman (2001), managers have to gain the support of their stakeholders and need to understand how their companies can influence or be influenced by others, in order to achieve the corporate objectives (Freeman & McVea 2001). It is therefore crucial for a manager to focus on the relationships of the firm with its stakeholders, by finding ways to balance and to integrate the multiple relationships and objectives that a firm can have (Freeman & McVea 2001).

Community members are stakeholders in community projects therefore it is important to involve them in projects activity from the start. Stakeholder's theory argues that every legitimate person or group participating in the activities of a firm or organization, do so to obtain benefits, and that the priority of the interest of all genuine stakeholders is not self-evident (Donaldson, and Preston, 1995). The Stakeholder Theory pays the same credence to stakeholders both internal and external; staffs, managers and owners as well as financiers, customers, suppliers, governments, community and special interest groups.

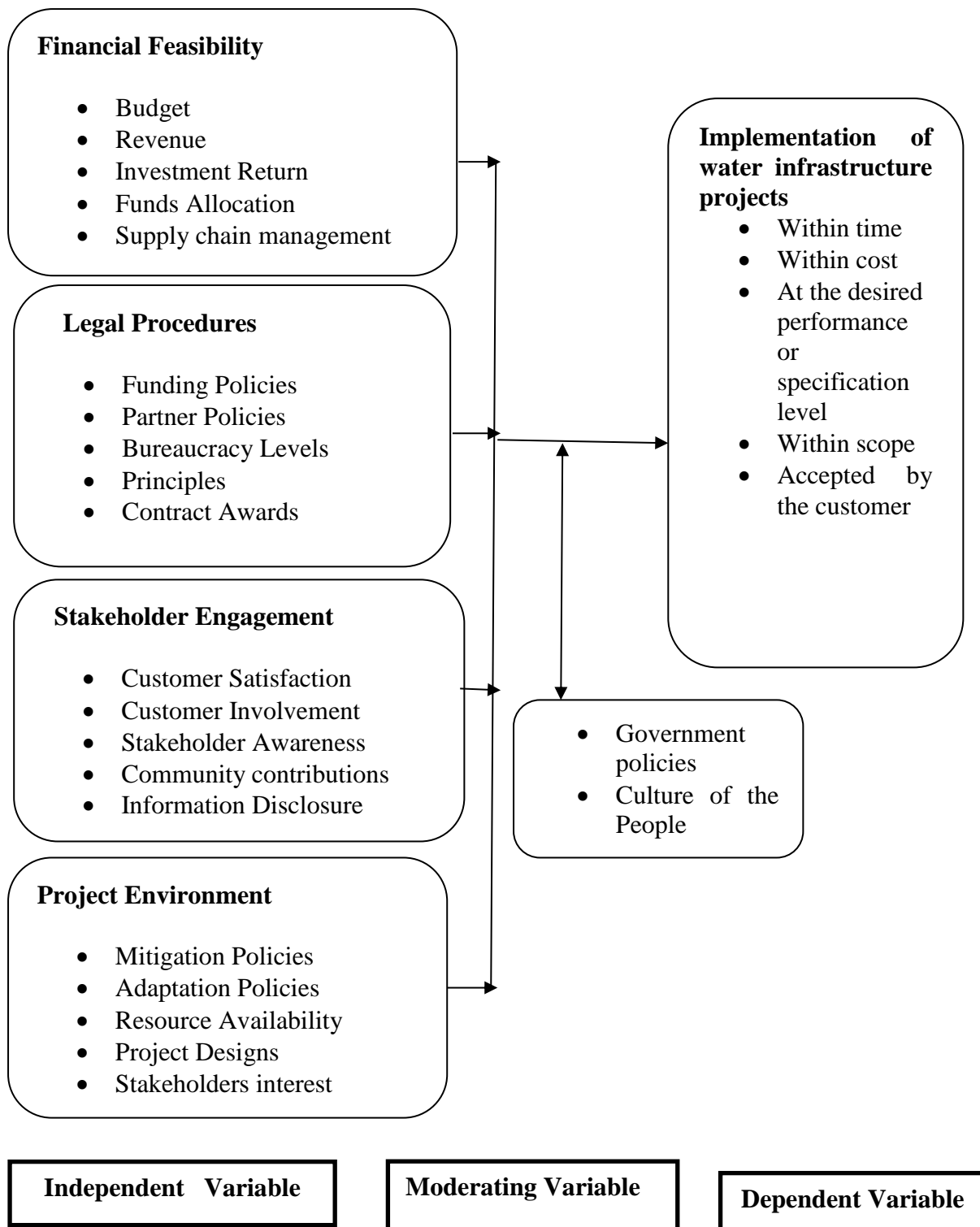
Community participation enhances social cohesion as they recognize the value of working in partnership with each other and organizations. It also adds economic value both through the

mobilization of voluntary donations to deliver reinforcement and through skills development, which enhances the opportunities for employment and growth in community wealth, gives citizens the chance to develop the skills and networks that are needed to address social exclusion. The owner of the project must ensure the community members voluntarily and actively participate in the projects from the start.

This theory also emphasizes that the community members also benefit from their participations. The projects need to ensure the community members also participate in the decision making, their staffs are trained on handling the community members and also the community members' interests are considered. This theory therefore leads to research question three which inquired on how community participation affects the successful performance of the projects. This theory therefore assisted in the better understanding of the importance of community participation in the success of community projects.

## **2.8 Conceptual Framework**

In this study, the conceptual framework looked at the relationship between factors influencing implementation water infrastructure projects a case of LAPSSET Authority, Kenya.



**Figure 1: Conceptual Framework**

The independent variables for this proposed study are represented by: financial feasibility, legal procedures, Stakeholders engagement, and project environment. They directly affect the dependent variable, which are projects in a PPP arrangement. Technology transfer and time represents the moderating variable, in that, it behaves like an independent variable, by having



a contributory effect on the success of PPP road projects but not enough to be considered significant.

## 2.9 Summary and Research Gap

This chapter provides an in-depth literature review of the various factors influencing implementation of water infrastructure projects. Despite a number of prior studies that have investigated the successes of water infrastructure projects, studies specific to the Kenyan water sub sector remain scarce. To the best knowledge of the researcher, there is no other study concerning successes of water infrastructure projects in Kenya. Hence, this research study aims to fill this knowledge gap by investigating factors influencing implementation of water infrastructure projects, the case of LAPSSET Authority, Kenya.

**Table 2.1: Summary and Research Gap**

Author	Study Topic	Key Findings	Research Gap
Anyango (2013)	Factors determining project implementation of health projects in Gedo Region, Somalia	that there was enough financial support for project implementation at World Vision Somalia thus effective project implementation	The study was however done in Somalia and not specifically in Kenya
Kikuvi (2015)	determinants of successful implementation of water and sanitation projects in Kenya, A case of informal settlement in Mombasa County, Kenya	there should be sufficient funds allocated to the projects by the donors, national government, county government and other stakeholders	The study focused on water sanitation projects and not specifically the water projects

Fulton et al. (2013)	The impact of stakeholder engagement in management strategy evaluation.	the numbers of people, level of interaction, and amount of information exchanged are likely to lead to chains of events going	The study focused on management strategy evaluation and not project implementation
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## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

This chapter describes the research methodology that was used to achieve the objective of this research project, which is to assess the factors influencing implementation of water infrastructure projects a case of LAPSSET Authority, Kenya.

#### **3.2 Research Design**

Research design represents the structure applied by a researcher in conducting the study (Cooper & Schindler, 2008). It provides a systematic order of events and actions in which the study was conducted to reach a given conclusion. The study adopted descriptive research design. The purpose of descriptive research is to determine and report how things are without manipulation which helps in establishing the existing state of the population under the study (Cooper & Schindler, 2008). Descriptive design gives room to probe for more information. Descriptive research design is preferred because it determines and reports the way things are and is appropriate because it is concerned with clearly defined problems with definite objectives (Kothari, 2004). The study design therefore includes an outline of what the investigator does from formulating research questions and their implications to the final analysis of data.

#### **3.3 Target Population**

The target population for this research project was selected based on three main criteria; (i) must possess adequate knowledge in the area of water projects; (ii) have followed very closely the development of water projects; or (iii) they have had a hands-on experience with water projects. As such, the target population consisted of 198 respondents all drawn from project managers, finance managers, stakeholders and beneficiaries in LAPSSET authority. The target population of the study was 198 respondents from LAPSSET authority.

### **3.4 Sample Size and Sampling Procedure**

A sample is subset of the entire population which can be selected using appropriate probability and non-probability methods through sampling. Since the number of targeted populations was small, the study employed census where all respondents were involved in the study. A census is a survey where the entire population was included in the study and it was more accurate. Bryman and Bell (2015) indicate that whenever the population was small of less than 200 members who were unique and having unique characteristics then applying a census where all members were picked for the study was ideal.

### **3.5 Research Instruments & Procedures**

The study employed a questionnaire to collect primary data. The questionnaires were used to collect data from the selected staff in LAPSSET. Questionnaires were appropriate for studies since they collected information that was not directly observable and accomplished as well as experiences of individuals (Mellenbergh, 2008). The questionnaire comprised both open and close-ended questions. The questionnaire collected both qualitative and quantitative data. Saunders, 2003) stated that a questionnaire is useful in obtaining objective data because participants are not manipulated in any way by the study. According to (Saunders, 2003) questionnaires have the added advantage of being less costly and using less time as instruments of data collection. The data instrument addressed the four research objectives while it was subdivided into two sections. The first section of the questionnaire enquired general information about the respondents, while the second section answered the four objectives.

The researcher dropped the questionnaires at the respondents' place of work and waited to fill them before collection for analysis. The researcher used the help of three research assistants to help in collecting data. Filling the questionnaire while waiting means that information was accurate and data was not contaminated (Yin, 2013), it also avoids discussion discouraging the respondents in giving their true opinion.

### **3.6 Pilot Testing of Instruments**

Pilot testing is usually carried out before the actual study is carried in the field. The essence of carrying out a pilot study is to determine reliability and validity of the instruments. According to Yin (2013), a pilot study can comprise of 1-10% of population of the study. In this regard,

the study will purposively select 10 respondents from LAPSET who will not be part of the final population and sample size of the study.

### **3.6.1 Reliability of the Instruments**

Reliability is the consistency of one's measurement, or the degree to which an instrument measures the same way each time it was used under the same condition with the same subjects. Cronbach's alpha was the most common measure of internal consistency ("reliability"). In this research, Cronbach's alpha was thought to best to determine if the multiple Likert questions in the questionnaire was reliable.

### **3.6.2 Validity of the Instruments**

Cook and Campbell (1979) define validity as the best available approximation to the truth or falsity of a given inference, proposition or conclusion. Ahire (1996) believe that if the measurement items in the survey "adequately cover the content domains or aspects of the concept being measured", an instrument has content validity. Gotzamani and Tsiotras (2001) and Wong and Aspinwall (2005) also have clarified that "it is not assessed numerically, but can only be subjectively judged by the researchers". Thus, to ensure validity of the test scores, before its release, the questionnaire was subjected to peer review from colleagues and the supervisor. This aimed at highlighting any potential errors in the research instruments thus ensuring the content validity.

### **3.7 Data Analysis**

Data analysis comprises the process of editing, coding and tabulation of the collected data into simpler summaries (Yin, 2013). Data was organized mainly by use of inferential and descriptive statistics. Descriptive statistics include mean and standard deviation was conducted. Inferential statistics included correlation and regression analysis to establish the factors influencing implementation of water infrastructure projects a case of LAPSSSET Authority, Kenya. Correlation analysis measured the strength of the relationship between the dependent variable and independent variables.

Regression analysis measures the factors influencing implementation of water infrastructure projects a case of LAPSSET Authority, Kenya. F Statistic was used to determine the validity of the regression model adopted. This statistic was compared to the F Critical value.

The Multiple Regression Model follows this format:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

Where Y = Water Infrastructure Projects

$\beta_0$  = Constant

$\beta_1$ ,  $\beta_2$ ,  $\beta_3$  and  $\beta_4$  are Coefficients of the factors influencing implementation of water infrastructure projects a case of LAPSSET Authority, Kenya

$\varepsilon$  = error term

$X_1$  = Financial feasibility

$X_2$  = Legal Procedure

$X_3$  = Stakeholders engagement

$X_4$  = Project environment

### **3.8 Ethical Confederation**

Ethics is about norms governing human conduct which have a significant impact on human welfare (Punch, 2013). It involves making judgment about right and wrong behaviour during the research period. Upholding ethical standards not only ensures that the research was carried out in an appropriate manner, but more so adds onto the integrity of the findings.

The ethical considerations when dealing with the anticipated institutions was addressed by the researcher sought authorization from the respective state corporations before commencing of the data collection exercise. In addition, the researcher obtained an introduction letter from the University to confirm to the respondents that the data was used for academic purposes only.

Data is the prime component of any research and shall thus be guarded with care. In ensuring the quality of data gathering, the research assistant enlisted was trained. Data retention shall be upheld by storing the collected data in both hard and soft copy for ease of instances when one may need to refer back to the data.

Most importantly, the human subjects were protected. The respondents remained anonymous and confidentiality on their participation and responses maintained. The state corporations on the other had also benefited from the researchers' confidentiality as the result obtained was only used for this research purpose only.

Lastly the researcher-maintained experiment responsibility by responding to any queries honestly

### 3.9 Operationalization of variables

**Table 3.1: Operationalization of variables**

Objectives	Variables	Indicators	Measurement Scale	Types of Analysis	Tools of Analysis
i. To establish the extent to which financial feasibility influence the implementation of water infrastructure projects, a case of LAPSSET Authority, Kenya	Independent Financial Feasibility	<ol style="list-style-type: none"> <li>1. Budget</li> <li>2. Revenue</li> <li>3. Investment Return</li> <li>4. Funds Allocation</li> <li>5. Supply chain management</li> </ol>	Ordinal Scale	Quantitative	Mean Score Ranking Technique
ii. To assess the extent to which legal procedures influence the implementation of water infrastructure projects, a case of LAPSSET Authority, Kenya	Independent Legal Procedures	<ol style="list-style-type: none"> <li>1. Funding Policies</li> <li>2. Partner Policies</li> <li>3. Bureaucracy Levels</li> <li>4. Principles</li> <li>5. Contract Awards</li> </ol>	Ordinal Scale	Quantitative	Mean Score Ranking Technique



<b>Objectives</b>	<b>Variables</b>	<b>Indicators</b>	<b>Measurement Scale</b>	<b>Types of Analysis</b>	<b>Tools of Analysis</b>
iii. To review the extent to which stakeholder's acceptance influence the implementation of water infrastructure projects, a case of LAPSSET Authority, Kenya	Independent Stakeholders Acceptance	<ol style="list-style-type: none"> <li>1. Customer Satisfaction</li> <li>2. Customer Involvement</li> <li>3. Stakeholder Awareness</li> <li>4. Community contributions</li> <li>5. Information Disclosure</li> </ol>	Ordinal Scale	Quantitative	Mean Score Ranking Technique
iv. To assess the extent to which project environment influence the implementation of water infrastructure projects, a case of LAPSSET Authority, Kenya	Independent Project Environment	<ol style="list-style-type: none"> <li>1. Mitigation Policies</li> <li>2. Adaptation Policies</li> <li>3. Resource Availability</li> <li>4. Project Designs</li> <li>5. Stakeholders interest</li> </ol>	Ordinal Scale	Quantitative	Mean Score Ranking Technique
Implementation of water infrastructure projects	Dependant Implementation of water infrastructure projects	<ol style="list-style-type: none"> <li>1. Within time</li> <li>2. Within cost</li> <li>3. At the desired performance or specification level</li> <li>4. Within scope Accepted by the customer</li> </ol>	Ordinal Scale	Quantitative	Mean Score Ranking Technique



## CHAPTER FOUR

### DATA ANALYSIS, PRESENTATION, INTERPRETATION AND DISCUSSIONS

#### 4.1 Introduction

This chapter presents the results of the survey and it also contain the analysis of data and presentation of the information collected descriptive and inferential statistics.

##### 4.1.1 Questionnaire Return Rate

A total of 198 questionnaires were distributed to the project managers, finance managers, stakeholders and beneficiaries in LAPSSSET authority, 143 questionnaires were filled. This gave a return rate of 72% which is deemed sufficient for the study. Mugenda and Mugenda (2013) stated that a response rate of 50% and above is ideal for the study.

##### 4.1.2 Reliability Test

The researcher carried out a reliability test to the research questions, the findings are as shown in Table 4.1.

Variable	Number of Items	Cronbach Alpha
Financial Feasibility	10	0.804
Legal Procedures	10	0.799
Stakeholder Engagement	10	0.813
Project Environment	10	0.845

The findings show that project environment had the highest influence on implementation of water infrastructure projects in LAPSSSET Authority, Kenya as supported by a Cronbach alpha coefficient of 0.845, followed by stakeholder's engagement with coefficient of 0.813, financial feasibility with 0.804 and lastly legal procedures with 0.799. The findings show that the research instruments were sufficient for the study as they a coefficient of 0.7 and above (Cronbach, 1951).

#### 4.2 Background Information of the Respondents

The information regarding; gender and length of service at LAPPSET Authority is as shown in subsequent section.

#### 4.2.1 Gender of the Respondents

The distribution of the respondent's gender is as shown in Table 4.1.

**Table 4.1: Gender of the Respondents**

<b>Gender of the Respondents</b>	<b>Frequency</b>	<b>Percent</b>
Male	83	58
Female	60	42
<b>Total</b>	<b>143</b>	<b>100</b>

The study established that 58% of the respondents were male followed by 42% who were females. The findings show that they were more males' staffs as compared to females.

#### 4.2.2 Length of Service at LAPSSET Authority

The findings of the length of service at LAPSSET authority of the respondents is as shown in Table 4.2.

**Table 4.2: Length of Service at LAPSSET Authority**

<b>Length of Service</b>	<b>Frequency</b>	<b>Percent</b>
Less than 1 year	40	28
1-5 years	69	48
6-10 years	34	24
<b>Total</b>	<b>143</b>	<b>100</b>

The findings show that 48% of the respondents had worked on a range of 1-5 years, followed by 28% who had worked for less than 1 year and lastly 24% indicated 6-10 years. The findings show that majority of the respondents had worked for more than 1 years an indication that they were well aware of the factors that influenced implementation of water infrastructure.

#### 4.3 Financial Feasibility and Implementation of Projects

The findings of the level of agreement by the respondents is as indicated in Table 4.3.

**Table 4.3: Financial Feasibility and Implementation of Projects**

<b>Financial Feasibility</b>	<b>Mean</b>	<b>Std. Dev</b>
There is adequate allocation of resources for all our projects	3.82	0.82
Projects are completed in time according to the planned budget	3.45	1.44
There are fewer incidences of misappropriation of funds in our LAPSSET	3.91	0.63
LAPSSET projects are audited annually	4.09	1.25
LAPSSET prepares timely project financial records	3.97	1.21
Our LAPSSET operates with a periodic budget	3.76	1.06
<b>Composite Mean and Standard Deviation</b>	<b>3.83</b>	<b>1.06</b>

Based on the findings, LAPSSET projects were audited annually (M-4.09, SD-0.82) and prepared timely project financial records (M-3.97, SD-1.21). Devarpiya and Ganesan (2017) obtains that poor financing arrangements, inadequate construction funding and budgets, bad cash flow that may be occasioned by contractor's and inaccessibility to formal structured finance have a heavy bearing on the project smooth running leading to delayed completion of a project.

There were fewer incidences of misappropriation of funds at LAPSSET (M-3.91, SD-0.63) Kikuvi (2015) states that proper allocation of funds and accountability reflects positively on timely project allocation. There was adequate allocation of resources for all LAPSSET projects (M-3.82, SD-0.82) and operated with a periodic budget (M-3.76, SD-1.06). Foster, Vivien and Cecilia (2016) states that adequate resource allocation to a project has a direct link to its completion.

Projects were completed in time according to the planned budget (M-3.45, SD-1.44). Kikuvi (2015) states that proper planning of a project and enough resources allocation ensures timely completion of a project. The study further found out that respondents agreed that financial feasibility had a significant influence on implementation of water infrastructure projects (M-3.83, SD-1.06). Anyango (2013) states that there is a direct link between financial feasibility and timely project implementation.

#### **4.4 Legal Procedure and Implementation of Projects**

The findings on level of agreement on influence on legal procedures statements are as shown in Table 4.4.

**Table 4.4: Legal Procedure and Implementation of Projects**

<b>Legal Procedure</b>	<b>Mean</b>	<b>Std. Dev</b>
LAPSSET Authority follows the funding policies enforced by the government.	3.95	0.66
LAPSSET Authority follows policies that protects the stakeholders	3.77	0.96
The legal procedure at LAPSSET Authority is applicable to bidders in the project	3.83	0.50
Regulations enforced by the law undergird the project implementation at LAPSSET Authority	3.59	0.89
LAPSSET Authority has to get licence approvals before implementing a project	3.66	0.92
LAPSSET Authority has to acquire for permits before project implementation	4.02	1.17
<b>Composite Mean and Standard Deviation</b>	<b>3.80</b>	<b>0.85</b>

The study found out that LAPSSET Authority acquired permits before project implementation (M-4.02, SD-1.17) and followed funding policies enforced by the government (M-3.95, SD-0.66) as supported by Yeoh and Popovič, (2016) who states that legal issues are set to provide useful insights to the government and the development partners on how to accomplish the timely completion of projects and therefore help in formulating strategies to address these factors.

Legal procedure at LAPSSET Authority was applicable to bidders in the project (M-3.83, SD-0.50). Schweizer et al. (2016) states that the organization need to abide to legal provisions to avoid the risk of being terminated from service provisions and services. The study further found out that acquiring a permit before project commencement increased the rate of project implementation. LAPSSET Authority followed policies that protected the stakeholders (M-3.77, SD-0.96). Ram, Corkindale and Wu (2013) states that project beneficiaries are deprived of the benefits that would have otherwise accrued from timely completion of the projects.

LAPSSET Authority got licence approvals before implementing a project (M-3.66, SD-0.92) and regulations enforced by the law undergirded the project implementation at LAPSSET Authority (M-3.59, SD-0.89). Schweizer et al. (2016) states that the organization need to abide to legal provisions to avoid the risk of being terminated from service provisions and services. The finding show that respondents agreed that legal procedure had a significant influence on implementation of water infrastructure projects (M-3.80, SD-0.85). Queiroz (2014) states that licence approvals and acquisition of permits ought to be acquired when implementing projects.

#### 4.5 Stakeholder’s Engagement and Implementation of Projects

The findings of respondent’s level of agreement on stakeholder’s engagement is as shown in Table 4.5.

**Table 4.5: Stakeholder’s Engagement and Implementation of Projects**

<b>Stakeholder’s Engagement</b>	<b>Mean</b>	<b>Std. Dev</b>
LAPSSET Authority allows community members to participate in the conception and design of the projects	3.65	0.66
LAPSSET Authority has good interaction with people involved in the project	3.77	0.96
LAPSSET Authority considers the interest of the stakeholders	3.93	0.58
Community members make contribution of cash for implementation of projects	3.84	0.89
The government is the main stakeholder of LAPSSET Authority projects	3.99	0.92
There is trust between LAPSSET Authority and its stakeholders	4.02	1.17
<b>Composite Mean and Standard Deviation</b>	<b>3.86</b>	<b>0.86</b>

Based on the findings, there was trust between LAPSSET Authority and its stakeholders (M-4.02, SD-1.17). Evans and Laskin (2014) states that organizations hope to gain stakeholder satisfaction and loyalty while stakeholders look for quality. Paris (2013) intimates that the stakeholders’ involvement in the strategic planning creates external advocacy for the organisation. The government was the main stakeholder of LAPSSET Authority projects (M-3.99, SD-0.92) and LAPSSET Authority considered the interest of the stakeholders (M-3.93, SD-0.58). Hillman (2014) noted that a firm has relationships with constituent (stakeholders) groups and the processes and outcomes associated with these relationships depend on the interest.

Community members made contribution of cash for implementation of projects (M-3.84, SD-0.89), LAPSSET Authority had good interaction with people involved in the project (M-3.77, SD-0.96) and LAPSSET Authority allowed community members to participate in the conception and design of the projects (M-3.65, SD-0.66). Fulton, Jones, Boschetti, Chapman, Little, Syme and Mare (2013) indicated that the numbers of people, level of interaction, and amount of information exchanged are likely to lead to chains of events going. The findings pointed out that stakeholder’s engagement had a positive influence on implementation of water

infrastructure projects (M-3.86, SD-0.86). Kakabadse (2015) states that managers should pay attention to stakeholders.

#### 4.6 Project Environment and Implementation of Projects

The findings on level of agreement on project environment are as shown in Table 4.6.

**Table 4.6: Project Environment and Implementation of Projects**

<b>Project Environment</b>	<b>Mean</b>	<b>Std. Dev</b>
The current environment is conducive for implementation of projects at LAPSSET Authority	3.97	0.66
There is enough security when it comes to project implementation	3.87	0.94
Our projects are politically supported	3.93	0.58
Our project environment makes our project implementation to be successful and faster.	4.07	0.89
Our project environment makes it easy for use to follow the policies involved in the project implementation	3.95	0.83
Our project environment makes it easy for the stakeholder to be involved in the project implementation	3.77	0.92
<b>Composite Mean and Standard Deviation</b>	<b>3.92</b>	<b>0.77</b>

The study established that LAPSSET project environment made project implementation to be successful and faster (M-4.07, SD-0.89), The current environment is conducive for implementation of projects at LAPSSET Authority (M-3.97, SD-0.66) and project environment made it easy for use to follow the policies involved in the project implementation (M-3.95, SD-0.83). There is need to develop appropriate techniques and management procedures that are specially tailored to the project environment in developing countries (Faniran 2014).

The projects were politically supported (M-3.93, SD-0.58), there was enough security when it came to project implementation (M- 3.87, SD-0.94) and project environment made it easy for the stakeholder to be involved in the project implementation (M-3.77, SD-0.92). Bal, Bryde, Fearon and Ochieng (2013) state that as a strategy and a practice in project design, mitigation strategies have to be incorporated in order to significantly reduce environmental effects to this project. Project environment had a positive impact on implementation of water infrastructure projects (M-3.92, SD-0.77). Project performance can be evaluated using a large number of performance indicators that could be of related to a variety of groups such as quality, client changes, health and safety, cost among others (Ranger, Reeder & Lowe, 2013).



#### 4.7 Implementation of Water Infrastructure Projects

The level of agreement on statements on implementation of water infrastructure projects are as shown in Table 4.7.

**Table 4.7: Implementation of Water Infrastructure Projects**

<b>Implementation of Water Infrastructure Projects</b>	<b>Mean</b>	<b>Std. Dev</b>
Our projects are implemented within stipulated time frame	3.91	0.78
Our projects are implemented within the scope	4.05	0.51
The projects at LAPSSET Authority Kenya are implemented within the budgets	3.94	1.07
All projects are implemented with the desired level of performance	4.01	0.88
<b>Composite Mean and Standard Deviation</b>	<b>3.97</b>	<b>0.81</b>

From the response, LAPSSET Authority projects were implemented within the scope (M-4.05, SD-0.51) and projects were implemented within stipulated time frame (M-3.91, SD-0.78). Ameyaw and Chan (2015) states that an appropriate time frame and scope of a project is sufficient for timely implementation of the project.

All projects were implemented with the desired level of performance (M-4.01, SD-0.88). Ameyaw and Chan, (2015) states that water projects have implemented to encourage safe rural water supply and sanitation. The projects were implemented within the budgets (M-3.94, SD-1.07) Respondents agreed that water infrastructure projects were implemented in the county (M-3.97, SD-0.81). Kimberly (1998) added that implementation rests on the capability to harness and sustain original project functional values.

#### 4.8 Correlation Analysis

The findings of correlation analysis are as shown in Table 4.8.

**Table 4.8: Correlation Analysis**

		<b>Financial Feasibility</b>	<b>Legal Procedure</b>	<b>Stakeholder's Engagement</b>	<b>Project Environment</b>	<b>Projects Implementation</b>
Financial Feasibility	Pearson Correlation	1	.519**	.558**	.581**	.601**
	Sig. (2-tailed)		.000	.000	.000	.002
Legal Procedure	Pearson Correlation		1	.471**	.499**	.503**
	Sig. (2-tailed)			.000	.000	.000
Stakeholder's Engagement	Pearson Correlation			1	.613**	.636**
	Sig. (2-tailed)				.000	.000
Project Environment	Pearson Correlation				1	.836**
	Sig. (2-tailed)					.000
Projects Implementation	Pearson Correlation					1
	Sig. (2-tailed)					

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

The result in Table 4.8 show that the relationship between financial feasibility and project implementation was a strong positive and significant ( $r=0.601$ ,  $p$ -value 0.002), legal procedures had a positive and significant relationship with project implementation ( $r=0.503$ ,  $p=0.000$ ), stakeholders engagement had a strong and significant relationship ( $r=0.636$ ,  $p=0.000$ ) and project environment had a strong and positive relationship with project implementation ( $r=0.836$ ,  $p$  value-0.836). The finding show that project environment had the strongest relationship with implementation of water infrastructure projects, followed by stakeholder's engagement, financial feasibility and lastly legal procedures. Huber (2004) held that for a weak correlation, "r" ranges from  $\pm 0.10$  to  $\pm 0.29$ ; in a moderate correlation, "r" ranges between  $\pm 0.30$  and  $\pm 0.49$ ; while in a strong correlation, "r" ranges from  $\pm 0.5$  and  $\pm 0.9$ .

#### 4.9 Regression Analysis

The findings of regression analysis are as shown in Table 4.9.

**Table 4.9: Regression Analysis**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	8.823	1.327		11.620	.536
Financial Feasibility	.262	.071	.215	3.663	.000
Legal Procedures	.140	.065	.176	2.158	.033
Stakeholder Engagement	.493	.048	.674	10.255	.000
Project Environment	.512	.049	.683	10.449	.002
R=0.872 <sup>a</sup>	Adj R <sup>2</sup> =0.750		F <sub>Calculated</sub> = 74.801	P=0.000	

a. Dependent Variable: Implementation of Water Infrastructure Projects

$$Y = 8.823 + 0.262X_1 + 0.140X_2 + 0.493X_3 + 0.512X_4$$

Where Y= Implementation of Water Infrastructure Projects

X<sub>1</sub>= Financial feasibility

X<sub>2</sub>= Legal Procedure

X<sub>3</sub>= Stakeholders engagement

X<sub>4</sub>= Project environment

Based on the findings in Table 4.9, R was 0.872 which presents a strong relationship between the variables, adjusted R<sup>2</sup> was 0.750 which translates to 75%. This means that 75% change in implementation of water infrastructure projects can be explained by the following; financial feasibility, legal procedures, stakeholder engagement and project environment. The residual of 25% can be explained by other factors affecting the current study that were not carried out in the current study. Based on the findings, F statistics was 74.801 and p value was 0.000, this show that the model was fit and there was a positive influence on implementation of water infrastructure projects by the four independent variables.

In regard to the findings in Table 4.9, holding all the other variables constant, on implementation of water infrastructure projects would be at 8.823. A unit increase in financial feasibility while holding all of the other factors' constant, project implementation would be at 0.262. A unit increase in legal procedures while holding all the other variables constant, project implementation would be at 0.140. A unit increase in stakeholders' engagement while holding

all of the other factors' constant, project implementation would be at 0.493. A unit increase in project environment while holding all of the other variables' constant, project implementation would be at 0.512.

In view to p and t value, the study found out that financial feasibility ( $p < 0.000 < 0.05$ ,  $t = 3.663 > 1.96$ ) influenced implementation of water infrastructure projects. Anyango (2013) states that there is a direct link between financial feasibility and timely project implementation. Foster, Vivien and Cecilia (2016) states that adequate resource allocation to a project has a direct link to its completion.

Legal procedures ( $p = 0.033 < 0.05$ ,  $t = 2.158 > 1.96$ ) had an influence on implementation of water infrastructure projects. Schweizer et al. (2016) states that the organization need to abide to legal provisions to avoid the risk of being terminated from service provisions and services. Yeoh and Popovič, (2016) who states that legal issues are set to provide useful insights to the government and the development partners on how to accomplish the timely completion of projects and therefore help in formulating strategies to address these factors.

Stakeholders' engagement ( $p = 0.000 < 0.05$ ,  $t = 10.255 > 1.96$ ) influenced implementation of water infrastructure projects. Paris (2013) intimates that the stakeholders' involvement in the strategic planning creates external advocacy for the organisation hence advocating for project implementation. Hillman (2014) noted that a firm has relationships with constituent (stakeholders) groups and the processes and outcomes associated with these relationships depend on the interest.

Project environment ( $p = 0.002 < 0.05$ ,  $t = 10.449 > 1.96$ ) had the strongest influence on implementation of water infrastructure projects. Bal, Bryde, Fearon and Ochieng (2013) state that as a strategy and a practice in project design, mitigation strategies have to be incorporated in order to significantly reduce environmental effects to this project. There is need to develop appropriate techniques and management procedures that are specially tailored to the project environment in developing countries (Faniran 2014).

## CHAPTER FIVE

### SUMMARY AND DISCUSSIONS, CONCLUSION AND RECOMMENDATIONS

#### 5.1 Introduction

This chapter contains the summary findings, discussion, conclusion and recommendations of the results that was obtained from the data analysed and the information gathered in chapter four. Suggestions for further studies are also presented.

#### 5.2 Summary of the Findings

The main objective of this study was to assess the factors influencing implementation of water infrastructure projects in LAPSSSET Authority, Kenya. The study was guided by the following research questions; what is the influence of financial feasibility on the implementation of water infrastructure projects? What is the influence of legal procedures on the implementation of water infrastructure projects? What is the influence of stakeholder's engagement on the implementation of water infrastructure projects? What is the influence of project environment on implementation of water infrastructure projects Significance of the Study?

##### 5.2.1 Financial Feasibility and Implementation of Projects

From correlation results, financial feasibility has a strong positive and significant effect on project implementation was ( $r=0.601$ ,  $p$ -value  $0.002$ ) and regression results showed that financial feasibility ( $p=0.000<0.05$ ,  $t=3.663>1.96$ ) influenced implementation of water infrastructure projects. LAPSSSET projects were audited annually (M-4.09, SD-0.82) and prepared timely project financial records (M-3.97, SD-1.21). There were fewer incidences of misappropriation of funds at LAPSSSET (M-3.91, SD-0.63). There was adequate allocation of resources for all LAPSSSET projects (M-3.82, SD-0.82) and operated with a periodic budget (M-3.76, SD-1.06).

##### 5.2.2 Legal Procedure and Implementation of Projects

Correlation results indicated that legal procedures have positive and significant relationship with project implementation ( $r=0.503$ ,  $p=0.000$ ). Regression results showed that legal procedures ( $p=0.033<0.05$ ,  $t=2.158>1.96$ ) had an influence on implementation of water

infrastructure projects. The study found out that LAPSSET Authority acquired permits before project implementation (M-4.02, SD-1.17) and followed funding policies enforced by the government (M-3.95, SD-0.66). Legal procedure at LAPSSET Authority was applicable to bidders in the project (M-3.83, SD-0.50). The study further found out that acquiring a permit before project commencement increased the rate of project implementation. LAPSSET Authority followed policies that protected the stakeholders (M-3.77, SD-0.96).

### **5.2.3 Stakeholder's Engagement and Implementation of Projects**

The findings of correlation analysis showed that stakeholder engagement had a strong and significant relationship ( $r=0.636$ ,  $p=0.000$ ). Regression analysis indicated that stakeholders' engagement ( $p=0.000<0.05$ ,  $t=10.255>1.96$ ) influenced implementation of water infrastructure projects. It was revealed that there was trust between LAPSSET Authority and its stakeholders (M-4.02, SD-1.17). The government was the main stakeholder of LAPSSET Authority projects (M-3.99, SD-0.92) and LAPSSET Authority considered the interest of the stakeholders (M-3.93, SD-0.58). Community members made contribution of cash for implementation of projects (M-3.84, SD-0.89), LAPSSET Authority had good interaction with people involved in the project (M-3.77, SD-0.96) and LAPSSET Authority allowed community members to participate in the conception and design of the projects (M-3.65, SD-0.66).

### **5.2.4 Project Environment and Implementation of Projects**

The study found out that from correlation analysis that project environment had a strong and positive relationship with project implementation ( $r=0.836$ ,  $p$  value-0.836). From regression results, it was shown that project environment ( $p=0.002<0.05$ ,  $t=10.449>1.96$ ) had the strongest influence on implementation of water infrastructure projects. It was established that LAPSSET project environment made project implementation to be successful and faster (M-4.07, SD-0.89), The current environment is conducive for implementation of projects at LAPSSET Authority (M-3.97, SD-0.66) and project environment made it easy for use to follow the policies involved in the project implementation (M-3.95, SD-0.83). The projects were politically supported (M-3.93, SD-0.58), there was enough security when it came to project implementation (M-3.87, SD-0.94) and project environment made it easy for the stakeholder to be involved in the project implementation (M-3.77, SD-0.92). Project environment had a positive impact on implementation of water infrastructure projects (M-3.92, SD-0.77).

### 5.3 Discussions of the Key Findings

The study found out that respondents agreed that financial feasibility had a significant influence on implementation of water infrastructure projects. LAPSSET projects were audited annually (M-4.09, SD-0.82), LAPSSET prepared timely project financial records (M-3.97, SD-1.21) and there were fewer incidences of misappropriation of funds at LAPSSET (M-3.91, SD-0.63). Kikvi (2015) states that proper allocation of funds and accountability reflects positively on timely project allocation. There was adequate allocation of resources for all LAPSSET projects (M-3.82, SD-0.82), LAPSSET operated with a periodic budget (M-3.76, SD-1.06) Anyango (2013) states that there is a direct link between financial feasibility and timely project implementation.

The finding show that respondents agreed that legal procedure had a significant influence on implementation of water infrastructure projects. LAPSSET Authority acquired for permits before project implementation (M-4.02, SD-1.17), LAPSSET Authority followed the funding policies enforced by the government (M-3.95, SD-0.66) and the legal procedure at LAPSSET Authority was applicable to bidders in the project (M-3.83, SD-0.50). Schweizer et al. (2016) states that the organization need to abide to legal provisions to avoid the risk of being terminated from service provisions and services. The study further found out that acquiring a permit before project commencement increased the rate of project implementation. Queiroz (2014) states that licence approvals and acquisition of permits ought to be acquired when implementing projects.

Based on the findings, stakeholder's engagement had a positive influence on implementation of water infrastructure projects. There was trust between LAPSSET Authority and its stakeholders (M-4.02, SD-1.17). Evans and Laskin (2014) states that organizations hope to gain stakeholder satisfaction and loyalty while stakeholders look for quality. Paris (2013) intimates that the stakeholders' involvement in the strategic planning creates external advocacy for the organisation. The government was the main stakeholder of LAPSSET Authority projects (M-3.99, SD-0.92) and LAPSSET Authority considered the interest of the stakeholders (M-3.93, SD-0.58). Hillman (2014) noted that a firm has relationships with constituent (stakeholders) groups and the processes and outcomes associated with these relationships depend on the interest. Kakabadse (2015) states that managers should pay attention to stakeholders.

The study established that project environment had a positive impact on implementation of water infrastructure projects. LAPSSET project environment made project implementation to be successful and faster (M-4.07, SD-0.89), The current environment is conducive for implementation of projects at LAPSSET Authority (M-3.97, SD-0.66) and project environment made it easy for use to follow the policies involved in the project implementation (M-3.95, SD-0.83). There is need to develop appropriate techniques and management procedures that are specially tailored to the project environment in developing countries (Faniran 2014). The projects were politically supported (M-3.93, SD-0.58), Bal, Bryde, Fearon and Ochieng (2013) state that as a strategy and a practice in project design, mitigation strategies have to be incorporated in order to significantly reduce environmental effects to this project. Project performance can be evaluated using a large number of performance indicators that could be related to a variety of groups such as quality, client changes, health and safety, cost among others (Ranger, Reeder & Lowe, 2013).

#### **5.4 Conclusions**

The study concludes that financial feasibility had a strong relationship and positive influence on implementation of water infrastructure projects. This was achieved due to the following; projects were audited annually, financial records were timely prepared, periodic budget was used on implementation of projects, misappropriation of funds were eradicated and resources were adequately allocated. The findings are consistent with financial distress theory that states that financial management plays in the survival and persistence of organizations.

The study concludes that legal processes had a strong relationship and a positive influence on implementation of water infrastructure projects. This was attributed to the following; LAPSSET Authority acquired for permits before project implementation, followed the funding policies enforced by the government and got licence approvals before implementing a project and regulations enforced by the law undergirded the project implementation. LAPSSET Authority followed policies that protected the stakeholders.

The study concludes that stakeholder's engagement had a strong relationship and a strong influence on water infrastructure projects. The government was the main stakeholder of LAPSSET Authority projects. LAPSSET had built trust with its stakeholders and considered the interest of the stakeholders. LAPSSET Authority allowed community members to



participate in the conception and design of the projects and community members made contribution of cash for implementation of projects. LAPSSET Authority had good interaction with people involved in the project. The findings are in consistent with stakeholder theory that states that the projects need to ensure the community members also participate in the decision making, their staffs are trained on handling the community members and also the community members' interests are considered.

The study concludes that project environment a strong relationship and strong influence on implementation of water infrastructure projects. This was due to the following; LAPSSET project environment made project implementation to be successful and faster, project environment made it easy for use to follow the policies involved in the project implementation and the current environment is conducive for implementation of projects. Project environment made it easy for the stakeholder to be involved in the project implementation, projects were politically supported and there was enough security when it came to project implementation.

## **5.5 Recommendations**

1. The study recommends that policy makers should ensure that their financial records are audited for transparency and accountability. Policy makers should to create a budget enough for project implementation. Policy makers should to ensure that policies implemented protected the stakeholders. Policy makers should to build trust with its stakeholders and consider the interest of the stakeholders. Policy makers should to engage community members to participate in the conception and design of the projects.
2. The study recommends that management of LAPPSET should to finish the project as per the speculated time, prepare financial reports and avoid misappropriation of funds. The management should to ensure that they had permits before project implementation, followed the funding policies enforced by the government. Management should to ensure that they had licence approvals before implementing a project and follow the regulations enforced by the law to undergird the project implementation.
3. It is further recommended that LAPSSET project environment should to make project implementation to be successful and faster. Project environment should to make it easy for use to follow the policies involved in the project implementation. Current environment ought to be conducive for implementation of projects. Project

environment should to make it easy for the stakeholder to be involved in the project implementation and projects ought to be politically supported.

### **5.6 Suggestions for Further Studies**

1. The current study focused on factors influencing implementation of water infrastructure projects in LAPSSET Authority, Kenya, future scholars are encouraged to carry out a similar study on implementation of road infrastructure in LAPSSET Authority, Kenya and future scholar ought to focus on implementation of railway infrastructure in LAPSSET Authority, Kenya.
2. The current study relied on primary data, future scholars are encouraged to carry out a similar study on influence of implementation of water infrastructure projects in LAPSSET Authority, Kenya.
3. Future scholars need to carry a similar study on non-profit making organizations on implementation of projects.

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## APPENDICES

### APPENDIX I: QUESTIONNAIRE

Please fill out all the questions on:

#### FACTORS INFLUENCING IMPLEMENTATION OF WATER INFRASTRUCTURE PROJECTS A CASE OF LAPSSET AUTHORITY, KENYA

##### A. BACKGROUND INFORMATION

1. What is your gender?

Male [ ] Female [ ]

2. How long have you been with the LAPSSET Authority?

Less than 1 year [ ] 1- 5 years [ ] 6- 10 years [ ]

##### B. FINANCIAL FEASIBILITY AND IMPLEMENTATION OF PROJECTS

These are statements indicating the influence of financial feasibility in the implementation of water infrastructure project at LAPSSET Authority Kenya. Kindly indicate the extent to which you agree with the following statements on these factors on alcohol abuse. Use a scale of 1-5 where 1= strongly disagree, 2= disagree, 3= Neutral, 4= Agree, 5= strongly agree.

	1	2	3	4	5
There is adequate allocation of resources for all our projects					
Projects are completed in time according to the planned budget					
There are fewer incidences of misappropriation of funds in our LAPSSET					
LAPSSET projects are audited annually					
LAPSSET prepares timely project financial records					
Our LAPSSET operates with a periodic budget					

##### C. LEGAL PROCEDURE AND IMPLEMENTATION OF PROJECTS

These are statements indicating the influence of legal procedures in the implementation of water infrastructure project at LAPSSET Authority Kenya. Kindly indicate the extent to which

you agree with the following statements on these factors. Use a scale of 1-5 where 1= Strongly disagree, 2= disagree, 3= Neutral, 4= Agree, 5= Strongly agree.

	1	2	3	4	5
LAPSSET Authority follows the funding policies enforced by the government.					
LAPSSET Authority follows policies that protects the stakeholders					
The legal procedure at LAPSSET Authority is applicable to bidders in the project					
Regulations enforced by the law undergird the project implementation at LAPSSET Authority					
LAPSSET Authority has to get licence approvals before implementing a project					
LAPSSET Authority has to acquire for permits before project implementation					

#### **D. STAKEHOLDER’S ENGAGEMENT AND IMPLEMENTATION OF PROJECTS**

These are statements indicating the influence of stakeholder’s engagement in the implementation of water infrastructure project at LAPSSET Authority Kenya. Kindly indicate the extent to which you agree with the following statements on these factors. Use a scale of 1-5 where 1= Strongly disagree, 2= disagree, 3= Neutral, 4= Agree, 5= Strongly agree.

	1	2	3	4	5
LAPSSET Authority allows community members to participate in the conception and design of the projects					
LAPSSET Authority has good interaction with people involved in the project					
LAPSSET Authority considers the interest of the stakeholders					
Community members make contribution of cash for implementation of projects					
The government is the main stakeholder of LAPSSET Authority projects					
There is trust between LAPSSET Authority and its stakeholders					

#### **C. PROJECT ENVIRONMENT AND IMPLEMENTATION OF PROJECTS**

3. These are statements indicating the influence of project environment in the implementation of water infrastructure project at LAPSSSET Authority Kenya. Kindly indicate the extent to which you agree with the following statements on these factors. Use a scale of 1-5 where 1= Strongly disagree, 2= disagree, 3= Neutral, 4= Agree, 5= Strongly agree.

	1	2	3	4	5
The current environment is conducive for implementation of projects at LAPSSSET Authority					
There is enough security when it comes to project implementation					
Our projects are politically supported					
Our project environment makes our project implementation to be successful and faster.					
Our project environment makes it easy for use to follow the policies involved in the project implementation					
Our project environment makes it easy for the stakeholder to be involved in the project implementation					

## **PART F: IMPLEMENTATION OF WATER INFRASTRUCTURE PROJECTS**

11. These are statements in the implementation of water infrastructure project at LAPSSSET Authority Kenya. Kindly indicate the extent to which you agree with the following statements on these factors. Use a scale of 1-5 where 1= strongly disagree, 2= disagree, 3= Neutral, 4= Agree, 5= strongly agree.

	1	2	3	4	5
Our projects are implemented within stipulated time frame					
Our projects are implemented within the scope					
The projects at LAPSSSET Authority Kenya are implemented within the budgets					
All projects are implemented with the desired level of performance					

**THANK YOU**