

**INFLUENCE OF DELEGATED MANAGEMENT MODEL ON  
STAKEHOLDERS INVOLVEMENT IN PROVISION OF  
WATER SERVICES IN KISUMU CITY, KENYA**

**BY**

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## DECLARATION

### Declaration by the student

This research proposal is my original work and has not been presented for any award or presentation in any university.

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## **DEDICATION**

This research is dedicated to my mother Fatuma Saleh Chibole and my children Jaffar and Fatuma for their support, wisdom, strength and their loving generosity that has given me inspiration to continue even at a time that all else seemed hopeless.

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## **ABBREVIATIONS AND ACRONYMS**

<b>CBO:</b>	Community Based Organization
<b>C.I.D:</b>	Criminal Investigations Department
<b>DMM:</b>	Delegated Management Model
<b>DSDO:</b>	District Social Development Officer
<b>EWURA:</b>	Energy & Water Utilities Regulatory Authority
<b>FBO:</b>	Faith Based Organization
<b>HR:</b>	Human Resource
<b>HRM:</b>	Human Resource Management
<b>KNBS:</b>	Kenya National Bureau of Statistics
<b>KIWASCO:</b>	Kisumu Water and Sewerage Company
<b>LVSWSB:</b>	Lake Victoria South Water Management Board
<b>MO:</b>	Master Operator
<b>NACOSTI:</b>	National Commission for Science, Technology and Innovation
<b>NGO:</b>	Non Governmental Organization
<b>NRW:</b>	Non Revenue Water
<b>NWCPC:</b>	National Water Conservation & Pipeline Corporation
<b>OFWAT:</b>	Water Services Regulatory Authority
<b>PPP:</b>	Public Private Partnership
<b>SHG:</b>	Self Help Group
<b>UWASAM:</b>	Urban Water and Sanitation Management
<b>UFW:</b>	Un-accounted For Water
<b>WASREB:</b>	Water Services Regulatory Board
<b>WHO:</b>	World Health Organization

<b>WSB:</b>	Water Service Board
<b>WRSC:</b>	Water Services Regulatory Commission
<b>WSS:</b>	Water and Sanitation Services
<b>WWDB:</b>	Water Works Development Board

## ABSTRACT

Several models of water supply have been used by utility companies to supply water to their customers. Several models have been tried and there are still challenges of up-scaling and sustainability. This study investigated the influence of Delegated Management Model of water and sanitation on stakeholders' involvement in Nyalenda informal settlement in Kisumu City, Kenya. The objectives that guided this study include; influence of managerial functions, water connectivity, health and sanitation and monitoring and evaluation systems. The research questions that this research sought to address are; to what extent does Managerial Functions as a component of Delegated Management Model influence stakeholders involvement in provision of water services, what is the extent to which Delegated Management Model influence connectivity of water services, what is the influence of Delegated Management Model on health and sanitation in the informal settlements in Kisumu City and to what extent does Monitoring and Evaluation systems as a component of Delegated Management Model influences stakeholders involvement. The purpose of this research is to investigate through empirical field survey delegated management model and come up with a viable management improvement to the model. The objective was to establish the factors that hinder stakeholders' involvement in Delegated Management Model. It was hoped that the study would be significant to all the stakeholders in the water provision sector because the researcher hoped that this study can be used as a basis for further research. The findings and recommendations will help policy makers come up with achievable policies and a change of attitude from the local leaders and the residents with regard to DMM. The study was conducted in the informal settlement of Nyalenda in Kisumu City and was conducted using a cross-sectional survey on a sample size of 117 connected households. Master Operators and KIWASCO employees were interviewed as key informants to clarify on policies and legal frameworks and other technical issues with connected households as respondents. The sample size was selected using stratified sampling technique, where the sample was divided into stratus with every master line considered as strata of its own. Here, the researcher took 0.05% of the target population. The tool that was used was tested for its validity and reliability. The researcher conducted a pre-test in the various units, where ten households were given the questionnaires upon their consent, and therefore they were never included amongst the respondents. The study was conducted through a cross sectional survey research design. The study was based on a sample size which was drawn from the population size of 2,332 connected households. The data was collected by the researcher using the questionnaire. After the field work the researcher edited, coded and analyzed the data using both qualitative and quantitative techniques then came up with the main findings. The results are presented in form of tables. The study established that MOs are playing their role in the implementation of DMM. The research also established that KIWASCO is fully committed to the success of DMM although some employees are letting them down. The study also established that DMM has improved health and sanitation status in the informal settlements. Lastly, the research established that implementation of M and E is lacking in KIWASCO. Therefore, the researcher gave recommendations regarding these factors. The researcher recommends that KIWASCO should ensure that MOs and their employees understand DMM and be committed to its success, ensure a strong policy and legal framework for stakeholders' engagement with communication channels specified.

# CHAPTER ONE

## INTRODUCTION

### 1.1 Background of the Study

Water management problems and poor governance of water resources has been highlighted as the main contributions to water crisis across the globe (Rogers and Hall 2003). In particular, water governance has been a major issue towards achieving water security at local, national and international level (UNDP 2013). However, according to Rogers and Hall (2003), effectiveness of water governance is undermined by poor management, corruption, lack of appropriate institutions, bureaucratic inertia, insufficient capacity and shortage of investment. In the informal settlements many residents cannot afford to have individual water connections because of a multitude of factors including prohibitive costs of connections, lack of ownership to their houses and lack of awareness (Onyango, 2012). Water is conceptualized by its physical flow and the rules, social practices and political and socio-economic aspect (Bakker, 2003). Furthermore, water is “a symbol of identity, power and citizenship” and “demarcation” (Mosse 2008; Graefe 2006). Consequently, water resources management is influenced by not only the natural or scientific-technical factors but also by society as well as social relations of power and culture (Conca 2006; Mosse 2008; Truelove 2011CF; Heyen et al 2006). This implies that the continuum between the control and access to water and social relations of power is socially and ecologically inclusive (Truelove 2011; Swyngedouw et al 2006). The access to water in the global south is affected by several factors such as gender (O’Reilly et al 2009) and intra-community and intra-household differences which correlate with labour, health problems and illegal practices to obtain water (Truelove 2011). Consequently, unequal access to drinking water has persisted post 2015 MDGs.

Globally there are several models of water supply used by different countries depending on their technical capabilities, infrastructure, geographical features and source of water to be tapped for supply. In USA municipal water system is used to provide portable water to a wide array of commercial property and domestic use buildings including apartments, condominiums, duplex housing and single family dwellings (Hickey, 2008). The municipal councils in the United States of America have the responsibility of supplying water for both domestic and industrial use. Every municipal water system has to have a water supply source that is both adequate and reliable (Hickey, 2008). This system works better where infrastructure is fully developed and policies are geared towards supplying water sufficiently and in adequate quantities.

One bulk water supply service provider to the whole republic is a model that has well been utilized in Namibia (Water Resources Management Act, 2013). Nam Water is charged with the responsibility of supplying water to households, industrial customers like mines and also municipalities for resale under policy guidelines given by the Ministry of Agriculture, Water and Forestry through its department of water affairs (Water Resource Management Act, 2013). Namibia has a high accessibility to drinking water at a total of 91% with urban residents having access at 98% with rural slightly behind at 85% (Joint Monitoring Programme for Water Supply and Sanitation: Data Tables Namibia, 2016). To meet demand for water, Namibia utilizes ground water, surface water, seawater having constructed Erongo plant which is the biggest desalination plant in sub-Saharan Africa (NAMIBIA: First sub-Saharan sea water desalination plant, 2000) and reusing treated waste water to minimize water wastage. Having people residing far from supply plants and scattered in the country has necessitated the use of prepaid water using tag meters (Heymans, Eales and Franceys, 2014) which are installed in communal water points to offer customers the fairest way of collecting water from a shared standpipe and discourages water wastage (Heymans, Eales and Franceys, 2014).

In Tanzania water and sanitation is regulated by Energy and Water Utilities Regulatory Authority (EWURA) while policy setting has been given to two ministries with Ministry of Water and Irrigation setting policies for water and Ministry of Health and Social Welfare setting policies for sanitation (WHO/UNICEF, 2012). Water supply is done by 20 Urban Water Supply and Sanitation Authorities in the cities and about 100 in towns (Water Supply and Sanitation Act, 2009) although they can barely cover operation costs due to low tariff and poor efficiency (Water Sector Status Report, 2009) leading to decreased access to improved water sources. This is due to the sector depending heavily on external donors like the World Bank and European Union (National Water Sector Development Strategy 2006 to 2015). Improved water source is accessed by slightly more than half of its population with huge difference between urban areas at 79% and rural areas at 44% (WHO/UNICEF, 2012).

One of the outcomes of the water legislations and reforms in Kenya is the decentralization of water governance especially in the Urban and Informal settlements. The most common approach has been to delegate the water management through partnerships between the public and private institutions, otherwise called the Public-Private Partnerships (PPPs). This is done through the Delegated Management Model (DMM). The DMM is an innovative solution for improving water services to the urban poor. DMM draws on community resources and help

improve the management performance of the water provider or utility in a difficult context through a partnership for service delivery. In Kisumu, DMM was introduced in 2004 as partnership between the Kisumu Water and Sewerage Company (KIWASCO) and customers in the service delivery and implemented in the informal settlement of Nyalenda B. The model has since been implemented in the informal settlements of Nyalenda A, Nyamasaria, Kibos, Obunga, Bandani and Otonglo (Pro-Poor DMM Progress Report, 2016).

Water supply in Kenya has improved over the years after enactment of the Water Act No. 8 of 2002 which decentralized water and sanitation management. Previously the service provision was the responsibility of a single National entity, National Water Conservation and Pipeline Corporation and a few local utilities established in 1996 ( Annual Water Sector Review, 2009). The passage of the act led to the establishment of 91 local Water Service Providers (WSPs) who are linked to the 8 Water Services Boards (WSBs) in charge of assets management through Service Provision Agreements (WHO/UNICEF, 2015). The act also created Water Services Regulatory Commission which is a national regulator for water and sanitation. The general responsibility of setting policies belong to the Ministry of Water and irrigation for water supply and Ministry of Public Health and Sanitation for sanitation policies (Water bill No. 140f 2014). With the passage of water bill, 2014, the functions of the 8 WSBs were transferred to the 47 Water Works Development Boards in each county. Water remains an expensive commodity in Urban Kenya due to the high tariff of 60 per cubic meter. Although this tariff allows for the recovery of the operating costs but not the capital costs (WASREB, 2015). This is because of the high non-revenue water of 43% which based on unit cost of production led to an estimated 5.2 billion Ksh in 2014 (WASREB,2015). According to the Citizens Report Survey Card of 2007, the poor, in particular women and girls spend a significant amount of time fetching water in both rural and urban. The survey shows that users of water kiosks fetch water 4-6 times a day.

The study further shows that in Kisumu poor families spend 112 minutes per day to fetch water at normal supply and 200 minutes at times of scarcity. Kisumu is a port city in Kisumu county founded in 1901 with a population of 409,928 (Census, 2009). In 2015, WASREB report states that only Kisumu and Kericho counties have complied with the highest standards of quality water. Kisumu City is served by Kisumu Water and Sewerage Company (KIWASCO) which is a limited company fully owned by the County government of Kisumu charged with the mandate of providing portable water within its jurisdiction (Onyango, 2012). About 60% of Kisumu's population is found in the informal settlements and majority relies on



the Lake for their livelihood (Census, 2009). About 56% of Kisumu residents get their water from KIWASCO either directly or through established water vendors/kiosks while the remaining 44% get their water from boreholes, shallow wells, and other sources (Onyango, 2012). KIWASCO is implementing a pro-poor water supply model known as Delegated Management Model of which this research is going to explore. This is going to be done by interrogating the influence of stakeholders' involvement in the success of the model. The role of water in development, sanitation, health and poverty reduction is enshrined in Goal 6 of SDGs that seeks to ensure access to water and sanitation for all by 2030 (UN report, 2016). Target 6.1 seeks to achieve universal and equitable access to safe and affordable drinking water for all (UN report, 2016). Residents in informal settlements face a number of challenges including paying for more than 10 times the cost of water in other areas leading to poor access, high incidents of water-related diseases like cholera and typhoid due to poor quality arising from leaks, vandalism of infrastructure due to lack of ownership of the water infrastructure in the informal areas, high non-revenue water (NRW) of over 80% as a result of water theft and physical losses and capital costs and low returns in serving the informal settlements (Onyango, 2012).

Water sources are susceptible to contamination and thus a need for a service model that can ensure quality is maintained. WHO/UNICEF joint monitoring programme on water and sanitation, 2015, points out that diarrhea caused by bacteria and viruses in polluted water kills 1 child every 3 minutes killing more than HIV/AIDS or malaria. In poor countries one out of every five children fails to reach their fifth birthday, mainly due to infectious and environmental diseases that arises from poor water quality (UNDP, 2006). As a result, the debilitating effects of endemic diseases lower the productive potential of poor people living in the informal settlements. This has led to the UN giving utmost importance to addressing the social ills in its Sustainable Goals with no poverty, zero hunger and good health and wellbeing taking the first three positions in the UNs agenda for transforming the world by 2030 (UN report, 2016). This is further stressed by UN Sustainable Development Goals in goal No. 17 which seeks to ensure partnerships for all the sustainable goals to be achieved (UN report, 2016). To help attain this goal several concepts have been put on trial and the concept of Public-Private Partnership (PPP) has widely been embraced (Plummer, 2002).

## **1.2 Statement of the Problem**

Across the world there are several water crises. These crises are closely linked to water governance (Rogers and Hall, 2003). The serious water crisis that Kenya generally and Nyalenda in particular has been facing could be a recipe for social and economic disruption. As demonstrated earlier in this proposed study, the water governance can be addressed by improving water governance through a paradigm shift embracing partnerships. In particular, Public- Private Partnership (PPP), in broad sense, offer a form of co-governance (Kooiman, 2003) which helps to minimize the original costs that each sector has to spend and simultaneously maximize the benefits which both sectors can contribute. In Kenya, DMM has been implemented especially in the informal settlements as a form of PPP. The proponents of DMM have stated that DMM is an effective and efficient means of improving the supply of water and sanitation services within the informal settlements (Khan and Cotton, 2003; Kalyan Ray, UNHABITAT 2002). The preliminary reports have indicated that DMM have enhanced efficient provision and management of water provision, infrastructure management and access to clean water by the wider population within the settlements in the county (Onyango, 2012).

However, lack of enough staff with adequate technical training is a major problem in achieving efficient and effective services. Another problem is the high cost of capital in serving informal settlement with low returns (Onyango, 2012). In Nyalenda residents have low water connectivity which has a bearing on their health and sanitation conditions. Monitoring and evaluation of this situation by relevant authorities and stakeholders is important to ascertain the levels of service delivery. Residents have infringed on the roads reserves posing a problem to water infrastructure development leading to residents not getting enough quantities, lack of efficient and effective management and also getting contaminated water. This was supposed to be addressed by DMM. However, the extent to which DMM has addressed this problem is still debatable. It is therefore the intent of this study to contribute to this debate through a structured academic research.

## **1.3 Purpose of the Study**

The purpose of this study was to investigate the influence of Delegated Management Model implementation on stakeholders' involvement in provision of water services in Kisumu City, Kenya.

## **1.4 Objectives of the Study**

This study was guided by the following objectives;

1. To establish the extent to which Managerial Function as a component of Delegated Management Model influence Stakeholders' involvement in provision of water services in the informal settlements in Kisumu City.
2. To examine to what extent Delegated Management Model influences Connectivity of water services in the informal settlements within Kisumu city.
3. To assess the influence of Delegated Management Model on Health and Sanitation in the informal settlements in Kisumu city, Kenya.
4. To establish to what extent monitoring and evaluation systems as a component of Delegated Management Model influences stakeholders' involvement in Kisumu city, Kenya.

## **1.5 Research questions of the study**

This study was guided by the following research questions:

1. To what extent does Managerial Functions as a component of Delegated Management Model influence Stakeholders' involvement in provision of water services in the informal settlements in Kisumu City?
2. What is the extent to which Delegated Management Model influences Connectivity of water services in the informal settlements within Kisumu city?
3. What is the influence of Delegated Management Model on Health and Sanitation in the informal settlements in Kisumu city, Kenya?
4. To what extent does Monitoring and Evaluation systems as a component of Delegated Management Model influences stakeholders' involvement in Kisumu city, Kenya?

## **1.6 Significance of the study**

It is hoped that the findings of this study will be of great value to KIWASCO, local leaders, residents, development partners, relevant organizations and the general public at large. The implication of DMM on stakeholders' involvement is critical in the sustainability of the model. Sustainable development through community projects will be well researched and the report obtained can be used as a basis to further improve project management sector because,

during conflicts, support and willingness of all stakeholders is needed to amicably resolve the conflict before the project collapses.

Water is a necessity in life as the report titled *Water Rights and Wrong* asserts that “you can live for 40 days without food but just 5 days without water” (UNDP, 2007). This stresses the fact that water is very important in our lives. As one of the basic services, provision of water is important and necessary for human survival (Munala, 2009). Lack of or poor service can lead to serious health and hygiene risks for a bigger portion of the population (Fernholz, 2005). According to UNDP (2006), unclean water and poor sanitation has claimed more lives over the past century than any other cause.. This crisis threatens all humanity. People die from drinking contaminated water and women walk for long distances a day only to reach tainted water sources (UNDP, 2007). Studies have shown that urban poor suffer most from lack of access to WSS and where there is alternative then they pay more than 10 times the cost of water than other areas leading to poor access (Onyango, 2012). Residents of the informal settlements tend to be more vulnerable to water-borne diseases, as well as diseases associated with poor hygiene (Fernholz, 2005). This makes it necessary to have a model that would enhance provision of clean portable water because this is a very important tool in alleviating poverty as it impacts on health, income and consumption, and gender and social inclusion (Inocencio and David, 2001).

*It is therefore hoped that the findings and recommendations of this study will be useful in generation of better policies, better framework for involvement of stakeholders in decision making process and participatory monitoring and evaluation system for the sector. This will be done by giving tangible solutions and way forward. The findings of the study are expected to improve the management of the model for maximum benefits to be realized by all the stakeholders’. The study is expected to contribute to the existing body of knowledge and serve as a reference material for future research.*

### **1.7The basic assumptions of the study**

It was hoped that for a comprehensive study to be carried out within the stipulated timeframe and go through the study population, there was sufficient finances to do the research without any problem and when conducting the study interviewees were receptive and answered the questions correctly and accurately without biases or in fear of being exposed and that the results are of benefit to KIWASCO and the residents of Kisumu County and can help in the establishment of policies, create an environment where all stakeholders are committed to the

success of the project and have in place a reliable terms of reference that leads to the sustainability of DMM and benefit both the beneficiaries, management, development partners, local leaders, relevant organizations and residents.

### **1.8 Limitations of the study**

The limitation of DMM in Kisumu is multi-faceted. First, since this was a management-oriented study, financial analysis is appreciated but was not fully dealt with. Secondly, this research was limited to Nyalenda informal settlement as an ideal location because DMM was first piloted there. The other major limitation of the study was the idea of appraising the KIWASCO staff in the pro-poor department and donor partners by the beneficiaries. Most of them were afraid of speaking the truth about these KIWASCO staff and donor partners for fear of being victimized. They were persuaded and assured that no one would be victimized and that this research work is for educational purposes only and that their identity would not be made public although they were required to give their names for authenticity. Their contributions was generalized and coded to protect their identities. Finances to carry out this research was also anticipated to be a problem although the researcher expected to use his savings to finance part of the required budget and part was contributed by family and friends. Since the study was conducted in Nyalenda, information related to other informal settlements, which would otherwise be relevant were not included. Finally, the researcher expected time to be a constraint due to work and family obligations. The researcher took time off from work and family during weekends to carry out this research.

### **1.9 Delimitations of the study**

This study was conducted in Nyalenda informal settlement in Kisumu City. It was de-limited to DMM water projects and was aimed at identifying major DMM challenges and suggest various intervention strategies touching on management functions, water connectivity, health and sanitation and monitoring and evaluation systems, nature and extent of involvement of stakeholders. It covered all Master Operators within Nyalenda which is the largest informal settlement in Kisumu City and also because the model was piloted there and implemented. Despite the researcher being a resident of Nyalenda organizing for interview with the respondents was a challenge but he was flexible and used availability of respondents to arrange for a meetings. Residing in the settlement also made it easy for him to access homes and offices of the respondents get information and have appointment with the interviewees. Most beneficiaries are directly affected by this project thus making them willing to cooperate on the issues that will change their operations and sustain the project. Most respondents could

not understand the questionnaire but these questions in the questionnaire were explained to them since it was administered by the researcher himself and trained research assistants. Access to internet was also a barrier which the researcher overcame by accessing internet resources and the library which are provided by the University and the government for the public.

### **1.10 Definitions of Significant Terms Used in the Study**

This research document has adopted or coined terms for use in the text herein. Some of the terms are here defined to help the reader understand their meanings as used in the text.

**COMMUNITY-** People living in one place, county or country and sharing the same environment and social amenities.

#### **DELEGATED MANAGEMENT**

**MODEL-** This is a model for water provision used to provide water in the informal settlements. This concept is a partnership between KIWASCO and customers in water service provision in the informal settlements

**DEVELOPMENT PARTNERS-** Organizations or individuals supporting a development initiative by companies, NGOs and community.

**IMPLEMENTATION-** The act of accomplishing some objectives or executing a project. A means of achieving the project objectives.

**INVOLVEMENT-** Consulting or seek participation of stakeholders in a project and including them in its operations. Show to be concerned in their opinion

**PROJECT-** A unique endeavor consisting of a set of coordinated and controlled activities with a start and finish dates undertaken to produce a product or service. The end is realized when the project objective is realized or is terminated when it becomes apparent that the objectives cannot be realized under the constraints of time, cost and resources.

**STAKEHOLDERS-** This are people and organizations that have the potential

being affected or can affect, influence or be influenced  
by a project.

### **1.11 Organization of the Study**

This section gives brief structure information about this study. It outlines chapters in this study and the discussion in them. Chapter one provides an overview of the water and sanitation crisis worldwide and narrows to Nyalenda informal settlement in Kisumu. It gives the background of the influence of DMM on stakeholders involvement in sustainability in provision of water services in Kisumu City, admitting that for a successful design, implementation, management and having a conflict resolution mechanism of these community projects, all the short comings of its design, implementation, management and having a conflict resolution mechanism must be highlighted, stressing that an all-inclusive set-up should be adopted to ensure sustainability. This section also gives the statement of the problem, purpose and objectives of the study, research questions, significance, basic assumptions, limitations, delimitations and the organization of the study.

Chapter two provides the introduction of the literature review of the themes of the four objectives. This comprises the influence of managerial functions as a component of Delegated Management Model on stakeholders' involvement, influence of Delegated Management Model on connectivity, influence of Delegated Management Model on health and sanitation and influence of Monitoring and Evaluation on Delegated Management Model. A review of the theories associated with this study is also analyzed and a summary of the review discussed. This section presents the conceptual framework and also gives a summary of the literature reviewed. Chapter three provides the introduction of the research methodology used to achieve the research aims and objectives. The research design is defined, the target population given, sampling size and sampling procedure discussed, techniques of data collection and their instruments highlighted giving out the validity and reliability of those instruments to the study, data collection procedure is explained and finally, data analysis techniques discussed. Issues of validity of findings are raised herein with explanations on the operationalization of the variables in the study.

Chapter four presents the data analysis and presentation according to the research questions. It gives an introduction of the data collected giving analysis of those data. It gives the socio-



demographic of the respondents. This includes their gender characteristics, age distribution, the number of years stayed in Nyalenda and the level of education of the respondents. The data on the four objectives of the research are presented and analyzed. The data are presented in frequency tables and qualitatively and quantitatively analyzed. Interpretation and discussions of the findings are also discussed. Chapter five presents the summary, conclusions and recommendations of the study based on the analysis of data discussed in chapter four. It explains the proposed strategies to achieve an all-inclusive and acceptable framework for engagement in DMM. Future areas of study are also suggested in this section. The appendices provide a letter of introduction from the University of Nairobi, field entry permit from the National Commission for Science, Technology and Innovation, field survey instruments, references, work plan and the budget.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.0 Introduction**

This chapter discusses literature related to the influence of Delegated Management Model on stakeholders' involvement in provision of water services in Kisumu City. It mainly focused on the extent to which Managerial functions influences stakeholders involvements, influence of DMM on connectivity of water services, establish the influence of DMM on health and sanitation and to establish to what extent Monitoring and Evaluation systems influence DMM. A brief review of Delegated Management Model and stakeholders is also discussed

#### **2.1 The Concept of Delegated Management Model**

Delegated Management Model (DMM) is a system of water supply used by Kisumu Water and Sewerage Company to supply water to consumers within the informal settlements in Kisumu City. Delegated Management Model is a partnership between KIWASCO and consumers in water service provision (Onyango, 2012), and was first piloted in Nyalenda B informal settlement in 2004 and later commissioned in 2006 to cover most parts of Nyalenda A and B sub locations. The Model has since been expanded to cover other informal settlements within Kisumu city, notably Manyatta A and B, Nyamasaria, Kibos, Obunga, Bandani and Otonglo (Pro-Poor DMM Progress report, 2016).

In this model, KIWASCO delegates the responsibility of running water lines to individuals or organized groups on their behalf (Onyango, 2012). The responsibility include looking for customers in their areas of jurisdiction, connecting them to the main water supply line, responding to any complaints by the customers and billing them on a monthly basis (Delegated Water Supply Management Agreement (DWSMA), 2015). This model is very effective in enhancing services and reducing conflicts between KIWASCO and residents in the informal settlements and most importantly in reducing non-revenue water (KIWASCO Revenue report, 2015).

Some of the benefits of DMM can be seen in the improved health and sanitation especially regarding the outbreak of waterborne infections within the informal settlements (Practical Action Baseline Survey, 2009). This has been attributed to the migration of residents from depending on water from boreholes, wells or direct from the lake as well as the reduction in water contamination due to frequent water pipe bursts which took so long to be repaired

(Onyango, 2012). Some of the residents also broke those pipes for free water leading to conflicts and confrontation between KIWASCO and residents. Apart from cost reduction and provision of clean portable water, these individuals or groups also make money from this model since KIWASCO gives them water at wholesale price for them to retail. KIWASCO sells water to these Master Operators in bulk at Ksh. 25 per cubic meter while Master Operators sell the same to domestic customers at Ksh. 30 per unit for the first six units. From seven to twenty units at Ksh. 35 and any additional unit above that at Ksh 50 per unit. For commercial customers, Master Operators sell water at Ksh. 40 for the first 10 units and for the subsequent units at Ksh. 35 (DWSMA, 2015). This is low compared to rates used by KIWASCO to bill customers that they are serving directly to encourage many residents to get connected to water supply (WASREB Impact report, 2015). This has provided jobs to the residents mostly youths and to some extent the rate of crime has reduced in these settlements. However the most successful examples of DMM are found where contractual agreements are well defined (Water and Sanitation for the Urban Poor, 2012).

DMM is based on several management theories. These theories are theories that address how those in leadership positions in an organization like the managers and supervisors relate to their organizations in the knowledge of its goals, how to implement effective means to get the goals accomplished and how to motivate employees to perform to the highest standard (Project Management Body of Knowledge (PMBOK), 2015). This study is going to adopt a combination of classical leadership and administrative management theory. Administrative management theory is a rational way of designing an organization as a whole. It advocates for a formalized administrative structure, a clear division of labor and delegation of power and authority to administrators relevant to their areas of responsibilities. Henri Fayol, James D. Money and Luther H. Gulick are the proponents of this theory. On the other hand, Mary Parker Follett in classical leadership theory pioneered the notion of participative leadership involving all the stakeholders working together towards a common goal like decision making and problem solving. Delegated Management Model is anchored in article 10 of the constitution of Kenya 2010 that advocates for public participation in decision making on things that are likely to affect them.

This model is applied where the infrastructure is not fully developed and there is no definite provision for the services. It is suitable for the informal settlement because apart from the company achieving its mandate of supplying water, the residents are also empowered both financially and technically for them to buy-in the project and own it. This leads to the

sustainability of the project. However, the project has challenges including conflicts among the community members arising from the award of the DMM contracts land issues and inter clan and family conflicts.

Participatory Monitoring and Evaluation (PM&E) is a process of self-assessment, knowledge generation and collective action in which stakeholders in a project collaboratively define the evaluation issues, collect and analyze data, and take action as a result of what they learn through the process (Jackson and Kassam, 1998). There are five guiding principles of PM&E. the first is participation- creating structures and processes that include those mostly directly affected by the project and are powerless or voiceless. Negotiation is second where commitment to working through different conflicting views about what evaluation should focus on, how it should be conducted and used, and what actions should result. Third, PM&E should lead to learning to all participants which when shared leads to corrective actions aimed at improving the project. Fourth is that due to the changing circumstances, people and skills available for the process, flexibility is required. Lastly, project team can use a variety of methods to generate information (Rossman, 2015). PM&E is ideal for this study because it incorporates all the stakeholders at every stage of the project circle with the main objective of determining the relevance and fulfillment of objectives (Public service Commission, 2008).

Informal settlements are unplanned settlements and areas where housing is not in compliance with current planning and building regulations (United Nations, 1997). It exists where housing has been created in an urban or peri-urban location without official approval. It may contain a few dwellings or thousands of them and are generally characterized by inadequate infrastructure, poor access to basic services, unsuitable environments, uncontrolled and unhealthy population densities, inadequate dwellings, poor access to education and health facilities and lack of effective administration (National Upgrade Programme, 2017).

### **2.1.1 The Concept of Stakeholders Involvement in Provision of Water**

Today, every project takes place in a context where stakeholders play a major role in the sustainability of projects and often projects are sensitive to actions and decisions by these stakeholders (Chandana, 2014). Stakeholders are those who can positively or negatively impact the output of a given project since all projects are supposed to produce outputs as Food and Agricultural Organization of the United Nations (1971) argues. It is important for project managers to identify all the relevant stakeholders' during the initiation stage of a project. The project manager should take care of the interest of the stakeholders' while balancing the requirements of the project (Chandana, 2014). A survey was conducted in Norway among

project managers to collect their views on stakeholders' involvement. First, the research results show that clients and end users are the most important stakeholders. Second, other stakeholders are equal when it comes to causing problems and uncertainty for the project. Third, the findings indicate that more efforts should be made to provide new insights into project stakeholders' management (Karlsen, 2015). Central to the success of a project is how all the stakeholders in a given project are engaged and how they feel that their expectations are being met. The outcome of stakeholders management process depend mainly on how well the project manager presents the benefits and negative consequences brought on by the community project (Olander and Landin, 2007). By 2020, it is expected that over 50% of the population in the African countries will be residing in urban areas (Mwanza and Kariuki, 2003) and with it added responsibilities in service provision.

There are several stakeholders' management theories that this research is going to explore. One of these theories is descriptive stakeholder management theory which aims at understanding how manager's deal with stakeholders and how they represent their interests the corporation is viewed as a constellation of interests which sometimes is competitive and sometimes cooperative. Another is instrumental stakeholders' management theory which studies the organizational consequences of taking into account stakeholders' management and examining the connections between the practice of stakeholders' management and achievement of various corporate governance goals (Donaldson and Preston, 1995). This research is going to adopt the normative stakeholders' management theory. This principle promotes the vision of the company and the role of managers whose objective is mainly to maximize stakeholders' value in order to be sustainable (Fountaine, Haarman and schmid, 2006). Since public participation is a constitutional requirement, this research is going to apply the public participation model (Constitution of Kenya, 2010). This model is also significant because it creates a synergy between different stakeholders' which leads to sustainability of projects. Although different expectations of stakeholders, can lead to conflicts. This is especially where stakeholders are involved as a requirement of the law and policies without goodwill.

According to Dr. Peter Kagwanja of the Center for International Political Studies, University of Pretoria observes that, "Africa's poor are caught in the thick of a festering global water and sanitation crisis linked to pervasive violation of the basic human right to water...". Living conditions within these settlements are typically poor with residents facing a range of basic livelihood challenges, including poor access to safe drinking water and environmental

sanitation and water supply, solid waste accumulation, safety and security risks, and a range of health hazards. According to the comprehensive report of the World Bank in 2006 of the Kenya informal sector, housing social services provision and slums, there is a tremendous increase in the activities and involvement of the population in the sector. This has been largely due to the privatization of the public sector as well as rise in the unemployment rate among the youth and the need for affirmative action. Given the importance of addressing social ills of ensuring that there is no hunger, poverty and maintenance of good health in the world by 2030, UN report (2016) gives them a prominent place for them to be addressed. This is further stressed in the UN Sustainable Development Goals in goal 17 that seeks to partnerships for all its goals to be attained (UN report, 2016).

The government of Kenya has come up with several initiatives to reduce informal settlements and economically empower the poor. Over the years the government has developed various policies and programmes to address the problem of the informal settlements. The initiatives include the Urban Housing Programme of 1969, National Sites and Squatter Upgrading Programme (1972-1990), Sustainable Cities Programme initiated in 1992 and Kenya Slum Upgrading Programme.

Development of these initiatives has been largely informed by both global and national commitments on the informal settlements, such as the Sustainable Goals, National Vision 2030, Water Act, 2012, County governments act No. 17 of 2012, National Land policy of 1995, The Land Act, 2012, the Land Registration Act 2012, The National Land Commission Act 2012, The Environmental and Land Court Act 2011, The Urban Areas and Cities Act 2011 among others.

Stakeholders' involvement is sometimes stifled by the founder mentality syndrome where founders of a project would like to keep information about the project a secret especially on funding. This has led to many projects not achieving their objectives because of the infighting and conflicting situations occasioned by lack of information. Human rights activists and organizations started a sensitization campaign on these issues together with the organized groups which led to intervention measures being initiated by the NGOs. These NGOs included, among others, Action Aid, Shelter Forum, Kenya Human Rights Commission, Kituo Cha Sheria, SECODE, Practical Action and the Federation of Slum Dwellers. In this research proposal, review of literature on the influence of DMM implementation on stakeholders' involvement in provision of water services will be discussed based on certain national and international provisions and policies. This is because research shows that, there is

sufficient evidence to claim that policies and practices do affect company performance (Benardin, 2007).

## **2.2 Managerial Functions and stakeholder involvement in Provision of Water**

Management is a social process involving responsibility for economical and effective planning and regulation of operations of an enterprise in the fulfillment of a given purpose. It encompasses assignment of authority to another person or body to carry out specific activity (Robbins and Coulter, 2009). Delegation is a dual responsibility where specified authority by a higher authority is delegated. The one to whom authority is delegated becomes responsible to the superior for doing the job but the superior remains responsible for getting the job done (Mooney, 1947). Management is a dynamic process made up of several processes and activities. These processes and activities are Planning, Organizing, staffing, directing and controlling. Although these five activities given by Koontz and O'Donnel are considered core and universal in management, different experts and scholars have broken them down differently. There are five fundamental functions of management i.e. planning, organizing, staffing, coordinating and controlling. Henry Fayol on the other hand views management as to forecast and plan, to organize, to command and to control.

All these management functions must be employed within some policies and legal framework to ensure a successful involvement of stakeholders in DMM. Stakeholders' involvement started during the incorporation of the Board of Directors comprising of 11 members. The Board is headed by a Chairman with 9 other Directors representing various stakeholders (KIWASCO Article of Association). Consumer organization for domestic and commercial users, women, the shareholders and the government are stakeholders represented in the Board (Onyango, 2012). In DMM Master Operators (MO) are selected in two stages which compliments another intended to identify strong suitable Community Based Organization (CBOs), individuals, or associations capable of realizing the project (Onyango, 2012).

The first stage involves community vetting by project committee of all groups that were interested in becoming Master Operator. This is done after interested parties have applied in response to an invitation by KIWASCO through open advertisement (KIWASCO Policy Guidelines, 2015). The groups that go through the first stage are then invited for an interview by KIWASCO through which the utility would get information on the group; its membership qualifications, business experience, source of finance and experience in water sector or plumbing. The group or individual that emerges top is then selected to manage that specific

line advertised (Onyango, 2012). Selected MO is then taken through vigorous training on a number of areas including billing, line maintenance, customer care, revenue collection, budgeting, record keeping, management and quality surveillance. This is a basic training that lasts for a week after which a formal contract is entered to between KIWASCO and MO. This contract defines rights, obligation and responsibilities of both parties although it is drafted by one party, KIWASCO. This has led to some stakeholders feeling that this contracts covers the company very much leaving MOs vulnerable to some loses totally out of their control. These losses come as a result of over registering meters, leaks and bursts and vandalism among others of which MOs will pay for (DWSMA, 2015).

Governance arrangement for both public and private utilities can take many structures (Kurian and McCarney, 2010). Governance courses of action characterize the connection between the service provider, its proprietors, its clients and regulatory substances. DMM project just like all other projects are a series of steps taken by responsible organizational agents to plan change process to elicit compliance needed to install change (Nutt, 1996). Managers of both the utility company and MO lines should use DMM project implementation to make planned changes in organizations by creating environments in which changes can survive and be rooted. This can only be achieved by involvement of all relevant stakeholders' as it will bring harmony in the project.

In all these processes, improvement of service delivery to customers is key since these customers provide feedbacks on the services and most importantly they provide resources that enable the project to continue operating through purchase of the services provided. The company and MOs should create an organizational culture that will encourage commitment from both its employees and the MOs.

### **2.2.1 Organizational Management and Stakeholders Involvement**

Culture is the pattern of qualities, standards, convictions, states of mind and presumptions that might not have been enunciated but rather shape the route in which individuals act and things complete (Armstrong, 2007). As indicated by Meyerson and Martin, 2007 culture can be viewed as a 'code word' for the subjective side of hierarchical life. Culture can likewise be portrayed as accepted ways of thinking, states of mind and qualities that exist in an association or "the way we get things done around here" (Funham and Gunter, 1993). Organizational management is based on the organizational culture. If the management of an organization has cultivated a culture of hard work and recognition of customers' needs and addressing them, then all employees will work towards achieving that goal. Timely



interventions to customers will lead to customer satisfaction. Leaders should make efforts to unite KIWASCO employees and Master operators and all their efforts should be towards realization of customer satisfaction. The organization's management should represent the "social glue" and generate a "we feeling" counteracting procedure of differentiations which are unavoidable piece of social life. Management should offer a common arrangement of implications which is the premise of communications and shared comprehension, if these capacities are not satisfied acceptably, management may fundamentally decrease the proficiency of an organization (Furnham and Gunter, 1993).

The aim of organizational management ought to be to create "mutuality", a state that exists when KIWASCO and Master operators are interdependent and both benefit from this interdependency (Walton 1985). In this study organizational management is defined as what is valued, the leadership style, the language and symbols, the procedures and routine shared by KIWASCO and Master operators in the delivery of water and sanitation to the community. Organizational management culture is formed in four different ways. First, culture is formed by the leaders in the organization, especially those who have shaped it in the past (Armstrong, 2007). Secondly, it is formed around the lessons that are learnt about desirable and undesirable behavior (Schein, 1985). Third, organizational management culture develops from the need to maintain effective working relationships among employees and this establishes value and expectations. Finally, organizational management culture is influenced by the working environment. The external environment may be relatively dynamic or unchanging (Furnham and Gunter, 1993). Cultural diversity in leadership practice is so extensive it can affect employees' relationship. The cultural range is so great that there is a danger of international managers operating simply at the level of caricature, folklore and trivial (Hofstede, 1980).

Organizational management culture is an important factor to both the management of KIWASCO and master operator groups. A good organizational management culture exerts a positive influence on leadership behaviors of the people (Furnham and Gunter, 1993). Organizational management culture focuses attention on the human side of organizational life and finds significance and learning in even its most ordinary aspects. It requires members especially leaders', to acknowledge the impact of their behavior on the employees culture (Devis and Linda 2001). Which is missing in the informal settlement of Nyalenda? If an organizations' management supports its employees' family responsibilities and foster employees' friendly culture, the organization experience less conflicts, less favoritism, low

turnover, more satisfaction and development and a generally happier organization (Soonhee, 2001).

Organizational management culture that is worked around such standards as satisfying clients, reasonable treatment, working greatness and representatives strengthening advances workers practices and an esprit de corps that encourages the execution of procedures keyed to high item quality and unrivaled client benefit. Authoritative administration culture that is implanted with qualities and practices that encourages procedure execution, advances solid union of workers in distinguishing proof with and sense of duty regarding the associations vision, execution targets and technique. At the point when organizational management culture is grounded in a considerable lot of the required procedure executing practices, representatives feel really better about their occupations, the organization they work for and the benefits that the association is endeavoring to fulfill.

However, even stable organizational management cultures aren't static just like strategy and organization structure, they evolve. New challenges in the market place, revolutionary technologies and shifting internal conditions especially the ones eroding business prospects, an internal crisis, or top leadership turnover tend to breed new ways of doing things and in turn, organizational cultural evolution. When the organizational management culture is in conflict with some aspects of the organization's direction, performance targets, or strategy, the organizational management culture becomes a stumbling block.

### **2.2.2 Organizational Commitment and Provision of Water Services**

Research shows that, there is sufficient evidence to claim that policies and practices do affect company performance (Benardin, 2007). Organization commitment refers to attachment and loyalty. It is the relative strength of the individual identification with and involvement, in a particular organization (Porter *et al*, 1974). It is a state of being in which an individual becomes bound by his actions to a belief that sustain his activities and his own involvement (Salancik, 1997). In this study, organizational commitment is a positive two way relationship between the master operators and their service provider organization KIWASCO. Both parties are aware of their own and the others needs and the way they support each to fulfill those needs. Japanese school of theory wrote that, "Trust people and treat them like adults, enthuse them by lively and imaginative leadership, develop and demonstrate an obsession for quality, make them feel they own the business, and your workforce will respond with total commitment (Porter and Austin, 1985). In Japan there tends to be a strong sense of loyalty to ones employer, while in Britain and the United States there is a growing sense of

identification with one's occupational group rather than with a particular employer. The long standing of professional bodies and the declining long term reliability of corporations as wagons to which to hitch one's career star here increased this sense of loyalty to one's occupation rather than to one's employer (Thompson, Gamble and Strickland, 2004).

The organization treatment of employees and by extension the master operators has direct bearing on the performance of DMM, loyalty to the organization and the image of the organization in total. KIWASCO need to walk extra mile by "adopting a managerial philosophy in which employees are seen to be reduced bit as an asset to be valued" (Deniz and Perez, 2003). A belief in the positive value of commitment that is eliciting employee commitment will lead to enhanced performance of DMM. The evidence shows this belief to be well funded (Walton, 1985b). High organizational commitment is associated with lower labour turnover and absence, but there is no clear link to performance (Guest, 1991). Where commitment is present, motivation is likely to be strong, particularly if a long term view is taken of effective performance (Huczynski, 1985). Organizational commitment is important to the Master operators because it increases their identification with the company through rewards related to organizational performance (profit sharing, gain sharing or employee share ownership scheme). The Master operators are given a voice in matters that concern them. From the same source Master operators benefit from organizational commitment by being involved in making decisions, and feel that their ideas have been listened to and that they have contributed to the outcome (Armstrong, 2007).

According to Guest, commitment is affected by personal characteristics, experience in job role, work experience, structural factors and personal policies. The concept of organizational commitment plays an important part in HRM philosophy. He suggested that HRM policies should be designed to 'maximize organizational integration, employee commitment, flexibility and quality of work (Guest, 1992). The importance of commitment is highlighted by Walton (1985), his theme is that improved performance would result if the organization moved away from the traditional control-oriented approach to workforce management, which relies upon establishing order, exercising control and 'achieving efficiency in the application of the workforce'. He proposed that this approach should be replaced by a commitment strategy. Workers respond best and more creatively not when they are tightly controlled by the management, placed in narrowly defined jobs, and treated like un-unwelcome necessity, but instead when they are given broader responsibilities, encouraged to contribute and helped

to achieve satisfaction in their work. He suggested that in the new commitment-based approach (Walton, 1985b).

Organizational commitment also has its own problem; commitment is not an all or nothing affair but a question of multiple or completing commitments for individuals (Cooper and Hartley, 1991). It can also be argued that the imposition of management's values on Master operators without their having any part to play in discussing and agreeing is a form of coercion (Thompson, Gamble and Strickland 2004). Having commitment from both the organizations employees and Master operators will translate to increased new water connections through better service delivery which will lead to customer satisfaction. This can be done through research since research is a tool that is used in identifying organization and people's problems, monitoring programmes and assessing impact (Brooms and Dozier, 1990). Research and evaluation may be used interchangeably, where evaluation refers to the systematic application of social research procedures for assessing conceptualization, design, implementation and utility of social intervention programmes (Cut lip, Center and Broom 1976).

Stakeholder identification and analysis is the first step to a successful project management since these stakeholders have the potential to ensure that the project realizes its objectives. Stakeholders' analysis is the procedure used to recognize the key individuals who must be prevailed upon (Thompson, 2015). According to Water and sanitation for the Urban Poor Topic brief (2012), the most successful examples of delegate management are found where contractual agreements are well defined.

The first step is the identification of stakeholders. This can be done through brainstorming. This is because even if stakeholders involve people and organizations ultimately you will speak to people. The project manager must document all relevant information for all the identified stakeholders. This information should include their interest, involvement, expectations, importance, influence and impact on the project implementation as well as any specific information requirements. After identifying the stakeholders the project team will have a very long list of people and organization which will need further analysis for their needs and interest to be identified. This will help in prioritizing their interests, powers and level of influence in the project. Map out your stakeholders and classify them by their power over your project and by their interest in your project. This will help in classifying them in different categories. High power, interested people; these are people or organizations that must be engaged fully and greatest efforts made to satisfy them. They may include donors,

county and national governments agencies political leaders, beneficiaries and the community. High power-less interested people; these are people who should be kept satisfied and informed however, less that they wind up plainly exhausted. Low power-intrigued individuals; keep these individuals sufficiently educated, and converse with them to guarantee that no real issues are emerging. These individuals can be extremely useful with the detail of the undertaking. Low power-less intrigued individuals; Monitor these individuals however don't exhaust them with over the top correspondence.

Project team need to know more about the key stakeholders. The project team will need to know or anticipate how they are likely to react to the project. It will also need to know how best to engage them and communicate to them, (Thompson, 2015). In understanding these stakeholders, the project team will have to ask themselves a few questions. What financial or emotional interest do they have in the project and is it positive or negative? What motivates them most of all in the project? What information would they need or want from the project? How would they want to receive information from the project and what is the best way of communicating to them? What is their current opinion of the project and is it based on good information? Who influences their opinions generally, and who influences their opinion of the project, and does this make those influencers project stakeholders? If they are not likely to be positive what will win them around to support the project? If the team does not think that they will be able to win their support then what will they have to do to manage them? And lastly, who else is influenced by their opinion and does that make this people stakeholders in the project on their own right? The project team will have to organize a brainstorming session and talk to these stakeholders directly. Discussions should be open and honest so as to enhance the chances of these people talking openly. This will help in building a successful relationship with them.

Underestimating the value of early stakeholders' engagement to a project always haunt the project in its implementation stage. It will not be easy to realize whether you are overworking, under working, going on a wrong tangent or you are not doing what is really needed in delivering a project just because the project team did not engage the right stakeholders early enough in the project. The value of early engagement is a smoother and easily run project, where the change is well managed (Munro, 2013). So many times in a project the project team may think that they have mapped the project well having all aspects of the project identified and scoped then later in the project life circle realize that there is a group that they were not sure about how it really affect the project but somehow must be involved. This may cause

difficulties for the project manager which may degenerate to a conflict situation in the project whereas if they would have taken a little bit more time to map out and review the process to develop a detailed requirements of all stakeholders this may not have happened. Mapping a process is invaluable for finding these invisible stakeholders (Munro, 2013).

The invisible will only become visible when you start documenting the process map because there will always be another branch of the process that no one really knew or understood. That's when this area will be identified and called out to allow for the whole process to be understood. Through this process the project will have another key stakeholder identified. Mapping process should be done at the start of the project since it will help to identify and have all stakeholders involved from the start. This will help in fostering meaningful dialogue, not only from the perspective of the project but also between the key stakeholders themselves. Through this process the stakeholders will realize their dependencies or inter-dependencies by identifying their key touch points and where their work overlaps or interlocks for a harmonious relationship in the project.

Mapping the process will help in the development of RACI. This will show who is Responsible, Accountable, Consulted and Informed to help the project manager identify who he needs to be engaging with and in what way. This will help the project manager in understanding the type and level of communication necessary for a particular stakeholder which ties in with the change management of good project management. By management spending much time in engaging with the stakeholders, the project will have a better chance of achieving success.

Early engagement of stakeholders will also help them to follow its progress, develop a sense of shared ownership and build momentum that pulls others in as the campaign comes to fruition (Dalton, 2014). This is more useful especially when the identified project has stakeholders with conflicting opinion about the project. It improves transparency and accountability in the project. By following the process, stakeholders will have a full audit trail of all activities and thus help in publishing documents and responses for any audience of stakeholders. Having audit trail will also help in building a coherent and solid evidence base on which decisions can be made and justified (Glover, 2013).

Stakeholders' engagement helps projects to be a part of the solution and not a problem and this reduces the risk of litigation which may be occasioned by some activists groups who may feel that their concerns were not adequately addressed. This will help in making the project a

socially responsible investment. Being praised by the stakeholders' for commitment to sustainable business practices helps with employee morale and recruiting (Heintze, 2013).

Organizational commitment is vital to KIWASCO, master operators and people of informal settlement if water and sanitation services is to be enhanced and when organizational culture is inappropriate, attempts can be made through research to determine what needs to be changed and to develop and implement plans for change. It can be done through questionnaires, survey and discussions in focus groups or workshops. It is often helpful to involve people in analyzing the outcome of surveys and getting them to produce a diagnosis of the issues.

### **2.3 Delegated Management Model and Water Connectivity**

Water in many ways can be described as a public good, that is, a good whose consumption does not reduce the amount available for others to consume. A public good has two essential attributes. First, they are “non-rivalrous,” meaning that one persons use does not deprive others from using them; they are available to everyone. Second, they are “non-excludable” such that when one individual benefits from a public good, its availability to others is not diminished, and it is practically impossible to charge individuals for its use or to exclude non payers (Migai Akech, 2007). Simply put, it will be under produced in the private sector or may not be produced at all following the conventional wisdom, so economic efficiency requires that the government forces people to contribute to the production of public goods and then allow all citizens to consume it (Holcombe, 1997). It is with this theory background that the researcher is going to review influence of DMM implementation on connectivity in Kisumu city in relation to other parts globally and regionally.

Water supply and sanitation in England and Wales is characterized by universal access and good quality service. This has been achieved compared to other developed countries by full privatization of service delivery and pioneering of independent economic regulation in the sector in Europe (Water Industry Act, 1991). Due to this privatization, water tariffs in the UK has substantially increased making the cost of water provision in the UK to be higher than most of the major countries in the EU (Metropolitan Consulting Group, 2006). Water Services Regulatory Authority (OFWAT) statistics also show that there has been significant improvement in service quality after the services were privatized (OFWAT, 2008). 1999 Act description prohibits the disconnection of water supply to homes for reasons of non-payment. The Act also gives consumers, particularly households the right to choose the basis on which they are charged for water and sewerage services. It allows for reteable value as a basis for

unmeasured charging and also allows for the Secretary of State to make regulations concerning particular charges to be applied to particular groups (Water industry Act, 1999). Water use at household level in England and Wales stood at about 145 litres per day in 2009 (Environment Agency, 2010). Water companies mainly use surface water which accounts for two thirds of the total water supply and also ground water which accounts for one third (Environment Agency, 2008). Total supply of water in England and Wales to both domestic and commercial customers stood 14.5 million cubic metres per day in 2009 (Water UK, 2010).

Water and sanitation coverage in England and Wales is 100% with supply continuity standing at 100%. Share of household metering is at 33% which is the lowest compared to other developed countries because users are not billed on volumetric basis (Water UK, 2010). This means that they have no financial incentive to conserve water. This has led to the Environment Agency to have 75% of households metered by 2025 since studies has shown that water meters reduces households water use by between 5-15% (Environment Agency, 2012). The quality of water supplied is universally high although there are a few isolated incidences like in Northamptonshire in June 2008 where quality of water fell below the required standards and residents were told to boil drinking water after routine tests (BBC, 2008). Water and sanitation tariffs in England and Wales are among the highest in the world compared to other developed countries (OFWAT, 2008/ Metropolitan Consulting Group, 2006). Despite the fact that this tariffs are among the highest in the world, water is still affordable to the residents as it accounts for less than 1.5% of residents' weekly earnings (OFWAT, 2014)

In other countries like Tunisia, water utilities provide only water supply services, while sewerage is under a different entity. However in most cases, sewer and sewerage treatment is also provided by water utilities. In some cases, water utilities also provide electricity and in a few cases, multi utilities also collect solid waste and provide telephone services. An integrated utility that provides both water and sewerage, collects solid waste and also provides telephone services is found in the Colombian city of Medellin. The utilities that provide water, sanitation and electricity are found in Frankfurt in Germany, Casablanca in morocco and Gabon. Multi utilities are able to provide certain benefits like common billing and the option to cross subsidize water services from revenues generated from sales of electricity if permitted by the law (Komives, Foster, Halpern, Woodon and Abdulah, 2005). The water crisis that is affecting so many people in the world is mainly a crisis of governance and not water scarcity



(Willem-Alexander, 2002). The introduction of cost reflective tariffs and cross subsidization between rich and poor consumers is an essential governance reform that is aimed at reducing high levels of UFW and to provide the finance that is needed to extend the network to the poorest households who remain unconnected (Nickson, Andrew, Francey and Richard, 2003). This objective can be achieved through partnership between public and private.

About 90% of urban water supply and sewerage provision services are currently in the public sector. They are owned and run by state or local authorities without the aim of making profit but are based on the ethos of providing a common good considered to be of public interest (Kishimoto, 2009). These publicly owned and managed water providers can be inefficient as a result of political interference leading to low labor and low productivity in middle and low income countries. Given this scenario the main losers from this institutional are the urban poor in these countries (WHO/UNICEF, 2010). Since they are not connected to the network they end up paying far more per litre of water because they will be buying water from secondary sources or from intermediaries as opposed to the well-off households who are connected to the network and benefit from the subsidies that they receive from these utilities (WASREB, 2015). The fact that we are still so far from achieving universal access to clean water and sanitation is a clear indication that public water authorities as currently constituted are not working well enough.

Despite Namibia being an arid country and facing regular droughts its water supply stands at a total of 91% with its urban areas having 98% of improved water source and rural areas at 85 (Joint Monitoring Programme for Water Supply and Sanitation, 2015). It has a very high household metering since all their water supply is metered both at household and community levels. Increase in the development in mining has also increased the demand for water and thus saline water extracted through local wells is used for dust suppression so as to reduce the need for fresh water (Water Management in Mining Report, 2012). It is also worthy to note that Epyeshona village uses only rainwater that is collected both on an individual basis from the rooftops and on a communal basis from a concrete area on the ground constructed especially for rainwater harvesting (Integrated Water Resource Management, 2015). Rural areas access is sometimes hampered by long distance between residences and water points and this has necessitated many rural Namibians to prefer traditional wells (Albuquerque, 2011). Namibia per capita water consumption is estimated to be 200 litres per capita per day which is slightly higher than Europe and this includes industries, businesses and tourism. Residential water consumption is estimated at 163 per capita per day. An analysis of this trend

shows significant difference between neighborhoods with high income neighborhoods having 306 litres per capita per day as compared to 27 litres in the informal settlements (Uhlendahl, Ziegelmayr, Wienecke, and Mawisa, 2010).

To conserve the available portable water, the city of Windhoek launched a Zero Tolerance Water Wastage policy in 2016 under which it would disconnect or fine anyone using portable supply to water gardens or wash cars (World Water News, 2016). Water reuse is also highly practiced in Windhoek city. Citizens have over time become used to the idea that portable water reuse is included in their water provision process and have grown to pride themselves in the fact that their city in many ways leads the world in direct reclamation (Du Pisani, 2004). The city also introduced progressive water pricing and educational programs in the 1990s that has reduced consumption substantially (Van der Merwe, 1999). Water tariff in Namibia is among the highest in Africa with fixed monthly charge of (5 USD) about Ksh. 500 which is independent of consumption. Higher consumption is charged at a higher tariff. Residents of the informal settlements receive water through public standpipes equipped with pre-paid water meters (Heymans, Eales and Franceys, 2014).

Access to improved water source in Kenya still remains low at 37% despite various efforts being employed including laws, operations and policy changes (WASREB, 2009). While WHO/UNICEF JMP puts this figure at 63%. This difference is occasioned by WASREB giving data in their report that refer only to the population served by water service providers which does not reflect the entire country. Water supply is estimated to be 18 hours every day (WASREB, 2015) at an average tariff of KES 53 per cubic metre. Water in Kenya is billed by the amount of water consumed and as a result every connection is metered giving a share of household metering to be at 89% (WASREB, 2015). The amount of self-financing by water utilities stand at 11% while tax financing accounts for the highest financing in this sector at 58% with external financing accounting for 31% (Ministry of Water and Irrigation, 2009). This can be explained by this utilities not being able to recover capital costs through water sales due to various reasons including high levels of non-revenue water at an average of 42%. Another reason is some counties do not have water and as such a need to tap water from distant water source (WASREB, 2015). A good example is Mombasa which is supplied by water from a source which is 220 km away from the city. In urban slums and rural areas there are low levels of access and poor quality in terms of intermittent water supply (WASREB, 2009).

Joint Monitoring Programme for Water Supply and Sanitation shows that 82% of Kenyans in urban areas had access to improved drinking water sources in 2015 with 45% having access to piped water through a house or yard connection. However, access has decreased from 92% in 1990 to 82% in 2015 while it has increased from 33% to 57% in the rural areas during the same period. More needs to be done to ensure that access to an improved water source is enhanced in the urban areas because as many people move to the city in search of jobs they cause a strain on the existing sources. Significant amount of time is used in fetching water by the poor especially women and girls (Citizen Report Card, 2007). The report further shows that users of water kiosks in cities fetch water 4-6 times per day. This means that a poor household in Kisumu spends 112 minutes per day to fetch water at normal times and 200 minutes per day during times of scarcity (Uwazi, 2010).

Water and sanitation regulatory board closely monitors WSPs with the aim of promoting comparative competition and performance improvements using water quality, continuity of supply and waste water treatment as indicators. In 2015 WASREB reported that 23 utilities provided good quality water with 95% compliance to standards, 15 had acceptable quality while 53 utilities provided water whose quality was not acceptable defined as less than 90% compliance. The parameters used in rating this quality levels is the measurements of residual chlorine (40% weight and compliance with bacteriological standards (60% weight). If the number of samples taken is lower than in the set standards then compliance is rated lower. The highest standard achieved among the utilities is by Kisumu and Kericho (WASREB, 2015). Informal Small Service Providers (SSPs) provide water in the low income areas. This is done through tanker trucks or jerry cans using handcarts often at high prices ranging between five to ten times compared to piped water. The other method is through organized groups or individuals who provide piped water supply. This partnership between a utility and self-help groups is found in Kisumu informal settlements where the utility sells water in bulk to self-help groups that in turn manage their networks and kiosks in their respective areas (Onyango, 2012). In enhancing efforts to formalize service provision in the low income areas, Water Services Trust Fund has developed two national concepts for service provision for the poor. The first one is the Community Project Circle that aims at making funds available to community projects that are willing to comply with the minimum set standards. Urban Poor Concept is another concept that has been implemented in low income urban areas since 2007 and has led to the construction of various water kiosks that meets sustainability standards (Ministry of Water and Irrigation, 2009). Implementation of DMM in Kisumu has enhanced the population of people with piped water but still more needs to be done since most people draw

their water from water kiosks. This can be attributed to perceived high cost of connections, lack of correct facts regarding DMM, lack of space for infrastructure and conflict between tenants and landlords. There is installments payment between MOs and their customer which has led to enhanced connections especially on commercial water points (Muungano Support Trust (MuST) Report, 2013).

## **2.4 Delegated Management Model and Health and Sanitation**

Joint Monitoring Program estimates on sanitation indicate that 30% of Kenyan had access to private improved sanitation, including sewerage. An additional 27% of the population used shared latrines in the urban areas while an estimated 15% of the population in the rural areas practiced open defecation (WHO/UNICEF, 2015). In the 2015 report by the Water and Sanitation Regulatory Board the figures did not include access to sanitation in the broad sense but only access to sewerage in the urban areas which was estimated to be 16% (WASREB, 2013). Improved sanitation facilities include flush, pour flush toilets connected to a piped system, septic tanks, VIP latrines and pit latrines. The Citizens Report Card indicates that septic tanks are often preferred in disposal of waste water from flush toilets. In Nairobi, Mombasa and Kisumu, pit latrines users indicated that some wastewater empties into storm sewers, soak-aways and cess pits designed for kitchen waste, thus causing environmental pollution (CRC, 2007). Poor households are more likely than non-poor ones to be relying on pit latrines and shared sanitation facilities with a small number practicing open defecation in Kisumu (CRC, 2007). The main reason for using flying toilets or open defecation is inaccessible public toilets and lack of money to construct toilets.

Kenya has made preconditions for upscaling economical sanitation through sanitation idea of the ministry of water. This idea incorporates onsite sanitation for low-wage areas, ecological concept including re-utilize choices, budgetary systems that considers upscaling in low-pay zones including local formal structures, acknowledgment and joining of Ecosan approaches including onsite treatment like Digester for biogas and baffle reactors, Reuse of grey water/urine for small scale irrigation and operation by commercialized utilities to ensure professionalism and manageability (Gakubia, Pokorski and Onyango, 2010). Sustainable sanitation should meet five criteria of health and hygiene, environment and natural resources, technology and operation, financial and economic and social-cultural and institutional (SuSanA, 2007). Health and cleanliness incorporate the danger of exposure to pathogens and perilous substances that could influence public health at all points of the sanitation framework from the toilet through the gathering and treatment framework to the point of re-utilize or

disposal and downstream populace. It likewise covers angles, for example, hygiene, nutrition and improvement of livelihood accomplished by utilization of a specific sanitation framework and in addition downstream impacts. Environment and natural resources includes the required energy, water, and other natural assets for development, operation and support of the framework, and in addition the potential emissions to the earth coming about because of utilization. It additionally incorporates the level of reusing and reuse practiced and the impacts of reusing wastewater, returning supplements and natural materials to agriculture, and the protection of other non renewable resource through creation of sustainable power sources like biogas. Technology and operation, consolidates the usefulness and the straightforwardness with which the whole framework including the accumulation, transport, treatment and reuse and/or last transfer can be built, worked and observed by the nearby group and/or the specialized groups of the neighborhood utilities. Besides, the strength of the framework, its vulnerabilities towards control cuts, water deficiencies, surges and the adaptability and versatility of its specialized components to the current foundation and to the statistic and socio-social improvements are essential viewpoints to be assessed. Budgetary and financial identify with the limit of family units and groups to pay for sanitation, including the development, operation, upkeep and the vital reinvestments in the framework. Other than the assessment of these immediate expenses and furthermore coordinate advantages like from reused items (soil conditioner, compost, vitality and recycled water) and outside expenses and advantages must be considered. Such outside expenses are ecological contamination and wellbeing perils, while benefits incorporate expanded agrarian profitability and subsistence economy, work creation, enhanced wellbeing and decreased natural dangers. Socio-cultural and institutional as a criteria in this category evaluates the socio-cultural acceptance and appropriateness of the system, convenience, system perceptions, gender issues and impacts on human dignity, the contribution to food security, compliance with the legal framework and stable and efficient institutional settings (Gakubia, Pokorski and Onyango, 2010). Safer disposal of human waste is a basic service that must be provided for healthier environment but most households in the informal settlements within Kisumu City face a major problem in accessing sanitation facilities and this has led to rampant waste disposal of human waste using polythene bags within the area which is not healthier for living conditions. This crisis is about the widespread abridgement of the basic human right to water, which entitles everyone to sufficient safe water within reach and affordability for personal and domestic use (Kagwanja, 2006). This has become a major contributing factor to the fact that informal settlements in Kisumu City has inadequate public sanitation facilities that can serve these densely populated

areas including public toilets both at household level and within the market spaces (Practical Action Baseline Survey, 2009).

Kisumu City being a lakeside City has a high water table in a soil that is poorly drained in most parts and lack of sewer lines within the informal settlements has made construction of sanitation facilities like toilets and latrines an expensive affair (Kisumu County Integrated Development Plan (KCIDP), 2013). Residents who have embraced the use of septic tanks have confessed to the high cost of building septic tanks. Most rental houses in Kisumu Informal settlements are semi-permanent structures popularly known as “landi” in the singular or “Lendni” when they are more than one, houses more than 10 households with a household having an average of 5 family members do not have access to sanitary services (Census, 2009). This is to a major extent attributed to the fact that landlords do not care to build this essential sanitary infrastructure for their tenants but continue to collect rent on a monthly basis; tenants on the other hand do not prioritize sanitary services when looking for a place to stay.

The County Government of Kisumu in trying to address this sanitation nightmare has come up with an integrated water and sanitation resources management and development through stakeholders’ participation to ensure availability and accessibility (KCIDP, 2013). Efforts to enhance sanitation awareness and compliance is further hampered by Public Health Department that do not have enough staff to ensure enforcement of these policies through prosecution of landlords who built residential plots without sanitary infrastructure (Practical Action Baseline Survey, 2009). The Nyalenda “B” Ward office is in the process of putting up public facilities in at least each and every market space to enable safer disposal of human waste but their capacity is limited to making that a reality (Nyalenda Ward Strategic Plan, 2013). This is a good initiative that should be incorporated in the County integrated development plan for implementation.

With the implementation of DMM in Kisumu informal settlements outbreaks of water borne diseases like Cholera has not occurred in the areas that the project has been implemented. However, outbreaks occur in areas along the rivers and shallow wells (Kisumu County Public Health Report, 2015). Better sanitation efforts have also had a boost by African Development Bank through implementation of the “Kisumu District Primary Schools Water and Sanitation Project” which was started in 2007 with implementation centres on approximately 3,200 pupils and school Management Committees at the six participating schools.

## **2.5 Monitoring and Evaluation and Delegated Management Model**

Monitoring and evaluation is a vital way of measuring project impacts. It helps demonstrate the difference that a particular project has made. It gives an insight about the project performance and highlights what works well and what doesn't. Understanding this is key in improving projects to better address their objectives. These two components are complimenting each other. Monitoring is the collection, analysis and use of information from projects while evaluation is assessing as systematically as possible an ongoing or completed project with the objective of making statements about their relevance, effectiveness, efficiency and sustainability.

In DMM, the project is monitored and evaluated based on three components of financial, management and extension work (Score Sheet for DMM, 2014).

### **2.5.1 Master operators financial management**

Under financial component, Master operator is evaluated on their performance on bill payments, general financial management, the safety of their customers' deposits and billing efficiency to their customers. On bill payment, it will be evaluated on how they have been able to pay for the bulk water sold to them by the utility company. It will also be analyzed if after paying for the bulk water there is profit to be made by the MO. The analysis will involve the date of payment if it is within the stipulated fifteen days or after, is the bill paid in full or in arrears, is there a default on the promissory agreement if any and the frequency of disconnections for non- payment of bills.

The other aspect that will be evaluated is the financial management of the MO where all the financial records maintained by the MO are scrutinized and audited. Here, there books of accounts are checked including their receipt books and bank accounts to ascertain if the MO has been observing good financial management to enable them meet their obligations to both the utility company and their customers. However, if the MO is not able to meet their obligation especially on bill payment to the utility company and despite how genuine the reason might be, the company is never supportive probably because of the high targets set by the company for its employees. This has caused bad blood between the employees and the MOs since the MOs feel that they are acting like insurance to the company since the project was implemented. This is because the company always insists on the full payment of water bill based on the bulk meter meaning that they are collecting 100% revenue on water supplied to the DMM areas as opposed to other areas not in the project.

It is important to note that all household meters under the custody of MOs are rented from the company after an initial payment of one thousand shillings with a monthly rent of seventy shillings. This means that the MOs are the custodians of the meters and providing security for them but essentially get no revenue from them but are forced to pay for them when they are lost (DWSMA, 2015).

The safety of customers' deposits is also a major concern because these deposits should be made available to the customers who wish to terminate their contracts due to one reason or another. This deposits should be kept in a different account for easy access and accountability but most MOs keep them in the same account making it difficult to know exactly how much money is meant for customer deposits and other monies received by the MOs. In the MOs contract agreement it is stated that the utility company will transfer all the deposits it received from the customers that they transfer to the MO lines but this has not been done making it difficult for transferred customers to get their deposits on termination of their contracts.

Lastly under financial, MOs are also evaluated on their billing efficiency. This involves accuracy in metering and billing. This covers how they are billing their customers in the billing circle, how they are delivering those bills to their customers, the conduct and services of MOs to their customers. MOs customers are supposed to receive their bills before third of every month and make payments on or before tenth of every month. The percentage of bill payment by these customers is also important because it is this collection that the MO are expected to use in paying for their bills. If the MO will not be able to pay for the bill and the supply for that line is disconnected, then it will mean that all their customers will have no supply including the customers who will have paid.

## **2.5.2 Master operators group management**

This is where the general management of the MO will be evaluated and appraised based on the customers' growth every month. This is done based on a target of adding ten customers to their grid every month. The MOs report on this growth every month through a monthly report submitted to the utility company every month. In these monthly reports, they are supposed to give reasons that made it possible for them to achieve or surpass their targets as well as the challenges faced. These challenges may hinder them from achieving their targets. When they are not able to meet their targets, then they are expected to explain on how they intend to overcome those challenges and the help that they may need from the company. The MOs will also explain their relationship with their customers giving the number of complaints received and resolved with the duration of time that it took them to resolve them. The compliments



also received from customers should also be recorded giving the names of those customers and their contacts and the service that warranted those compliments. Contacts of these customers are important for purposes of later verification.

The MO will also be expected to give the physical location of their offices, the leadership structure and the employees working there with their qualifications and experiences. The MO is then required to give the name of the contact person in case of a group. The employees are required to have at least primary school level of education although some MOs because of the dynamics prevalent in their areas do not meet this minimum basic requirement. The rate of non-revenue water is also required to be managed to a level where it does not exceed five percent of the total consumption of that area. This should be done through weekly reading of the meters so as to detect early if there is any water loss in the line. The MOs are also required to patrol their lines every morning to detect if there are any leakages within the line since pressure is always high at night as a result of most customers not using water at that time.

### **2.5.3 Extension work by the master operator**

The other aspect of monitoring and evaluating MOs is through the extension work that has been carried out in their lines. This is both in terms of the metres and the numbers of chambers constructed by the MO. MOs are required through their contracts to extend their lines by at least one chamber every month. This must be done by the approval and authority of the utility company. The MO is required to identify an area where there are potential customers giving the number of those who are ready for connection and potential one's for the future. After carrying out this analysis, MOs then makes a quotation of all the requirements for that extension work. They are then required to make a formal request to the utility company for approval. The utility company will then do its independent analysis through the pro-poor department before any decision can be made. In the event that the extension has been approved, then the MO is allowed to construct a chamber in that area and pay for both trenching and plumbing labour. The utility company gives pipes for connection and other materials requested. Since this infrastructure belongs to the company, the company is supposed to refund the MOs the entire amount that they may have spent during this extension exercise. However, this has not been the case. The MOs have been subjected to a very long and tiresome process but only getting promises that are never fulfilled. In the event that they are given the money then the money is added to their deposit. This means that they are not able to access that money since deposits can only be accessed at the termination of the contract. This has impacted negatively in the ability of MOs being able to extend their lines as

they are not willing to sink most of their profits in the extension work and not being able to access their funds. This is despite the contract stipulating otherwise.

The MOs are also required to report cases of illegal activities in their areas which are always not easy given that these MOs lack the training and capacity to investigate and report these activities. In many cases conflict has arose between MOs and some community members from reporting these cases. This is where part of community members believes that it is the prerogative of the government to give them water supply as opposed to them paying for their connections. This has led to vandalisms of water infrastructure in the informal settlements placing a very big burden on the MOs and their customers.

## **2.6 Theoretical Framework**

There are several reasons affecting DMM of water implementation on stakeholders' involvement in Kisumu County. These are reasons for partnership in economic development. According to Xie and Stough (2002), as regards the provision of urban services, a combination of neoclassical economic theory, the theory of state failure, the theories of public goods, market failure and merit goods provide theoretical foundation for PPP. According to the constitution of Kenya, stakeholders' participation is key to any project identification, design and implementation. Kenya Slum Upgrading initiative (KENSUP), an initiative that was launched by the Kenyan government in partnership with UN-Habitat, as regards people friendly policies, promoting, facilitating and where necessary providing security of tenure, income generation and provision of physical and social infrastructure including addressing the problems and impacts of HIV/AIDS (Municipal Council of Kisumu 2004; Kisumu city development strategy, UN-HABITAT).

The theory of public participation as presented in the constitution of Kenya 2010 and the county governments Act 2012 is going to provide the theoretical foundation for this research on stakeholders' involvement. This gives out the principles of stakeholders' involvement in all the projects identification, design and implementation and in the process of budgeting. These principles include; timely access to information, data and documents, reasonable success to the process of formulating and implementing policies, laws, and regulations, including the approval of development proposals, projects and budgets, the granting of permits and the establishment of specific performance standards, protection and promotion of the interest and rights of the minorities, marginalized groups and communities and their access to relevant information and promotion of public-private partnerships, such as joint

committees, technical teams, and citizens commissions, to encourage direct dialogue and concerted action on sustainable development (County Governments Act 2012 Part VIII).

This participation is further anchored in the United Nations sustainable goals in Goal 17 target 16 and 17 which gives importance of multi stakeholders; Vision 2030 which is a government blue print launched in 2008 to spur economic growth and transform the country into a middle income economy by 2030; City development Strategy for Improved Urban Environment and poverty Reduction which aims to mobilize local authorities and stakeholders to develop a programme laying out city development strategies (Situational analysis of informal settlements in Kisumu 2005, UN-HABITAT); Kisumu Slum Upgrading Initiatives which was launched by the government in partnership with UN-Habitat with the main objective of improving people's livelihoods in the informal settlements (City development strategy 2002, UN-HABITAT) and the Environmental Management and Coordination Act (1999) has established the National Environment Management Authority (NEMA) which makes Environmental Impact Assessment (EIA) mandatory for all projects to be undertaken (EMCA, 1999).

In the foregoing debate of private sector engagement in water and sanitation services, focus is mainly on the large networked utilities. Many times there is overlooking at the diversity of private actors that are concretely involved in water and sanitation supply services. Many are involved in the continuum of partnerships between public actor, private operators and communities. Most systems are hybrid and neither purely private or public. The changes in legal and institutional framework have contributed significantly to creating an environment that fosters multi-agency participation. There is an increasing awareness of the regulator as well as growing pressure from the general public and the regulated industry to move towards more transparency and accountability in regulatory decision making (Konig, Werchota and Barmerier, 2006). PPP arrangements involve a multitude of decisions, actors and processes. Partnerships per se are not straightforward linear processes, but rather negotiations in which various actors with different interests, stakes and powers, and circumstances are constantly trying to influence the service delivery process.

In practice, PPP for water and sanitation delivery services is done by and through various kinds of actors such as water boards, investors and consumers. Many organizations –the private partners – are formally constituted but majority in the informal settlement are not legally constituted by law (Munala, 2009). How these partners integrate has an impact in the PPP dynamics and efficiency and effectiveness in service delivery to the masses.

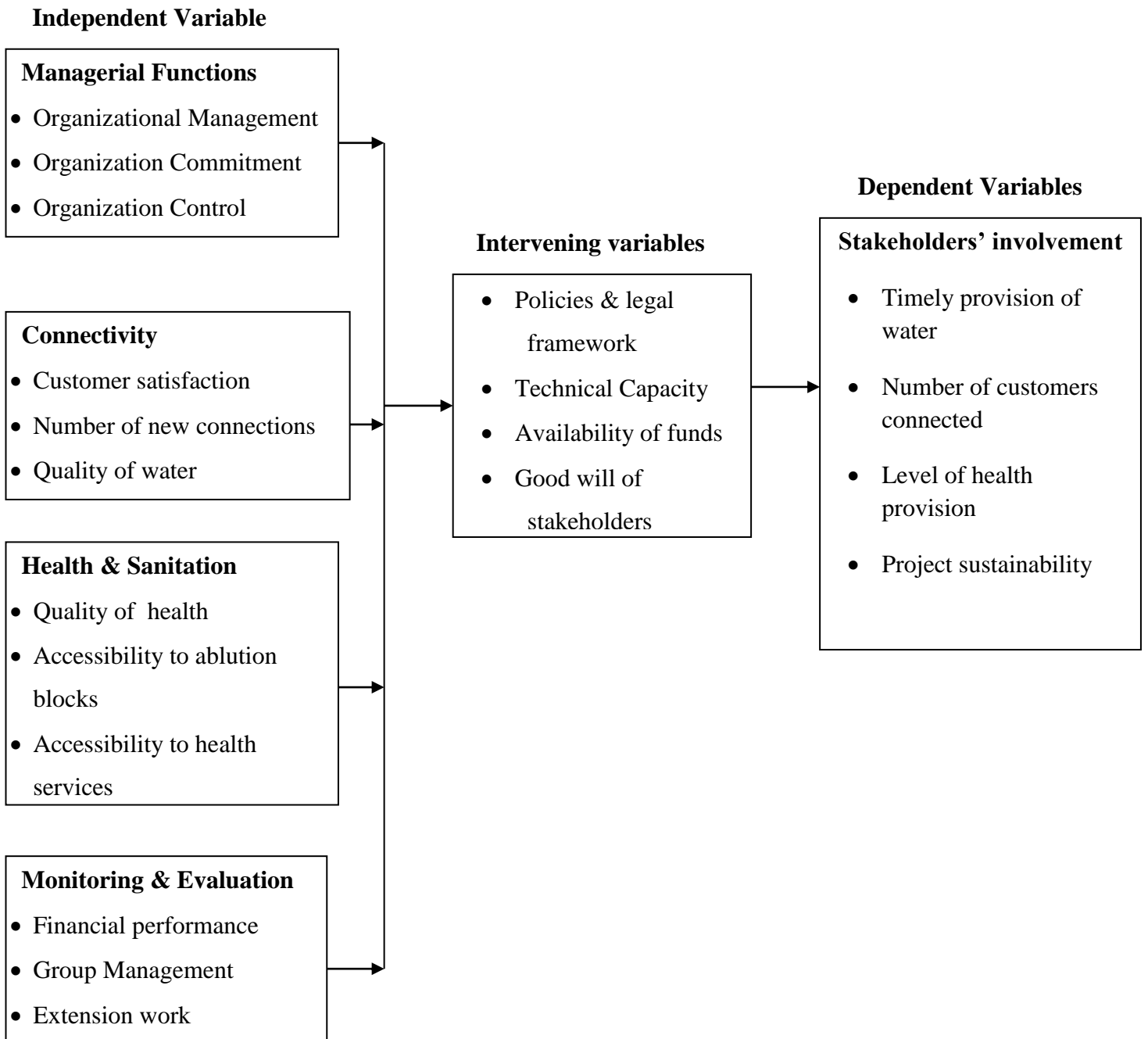
At the local urban level, many local entities are involved in PPP dynamics: environmental and health departments and agencies, urban development agencies, urban planning agencies, regulatory agencies, public water utilities, water users associations, master operators, consumer groups and other types of NGOs, religious groups, municipalities, community leaders and neighborhood associations.

There is an increasing awareness of the regulator as well as growing pressure from the general public and the regulated industry to move towards more transparency and accountability in regulatory decision- making (Konig, Werchota and Barmer, 2006). A culture of public consultation and active stakeholder engagement is gradually being built. These policies have enhanced stakeholders' satisfaction because they are involved as a requirement of the law in coming up with the design, procedures and structures (County Governments Act, 2012; Constitution of Kenya 2010). Unfortunately, some of the companies formed have inherited the past habits, especially ".....the skewed appointment of board members and constant wrangling" (Ratemo, 2007). It can therefore be inferred that for DMM situation, sustainability can only be achieved when best managerial practices are employed and there is a clear and strong policies backed by a strong political commitment that recognizes the scarcity of water, that underscores the importance and value of water for all citizens, and that is willing to take effective actions for managing water wisely, in an equitable, sustainable and economically efficient manner (Munala, 2009).

## **2.7 Conceptual Frame Work**

Conceptual framework in fig. 2.1 shows the relationship between the independent variable and dependent variable as well as the intervening variables which influence the implementation of Delegated Management Model. A conceptual framework is a chart explaining the interlink of what is to be studied at a concept state (Kothari, 2004). It establishes the relationships and provides indicators of deciding on research questions, objectives and the methodology for solving the phenomenon under investigation.

## 2.7 Conceptual Framework



**Figure 2.1:** Conceptual framework

The factors being studied in the conceptual framework are managerial functions, DMM implementation, health and sanitation and monitoring and evaluation. These directly influence DMM implementation with regards to stakeholders' involvement, connectivity of water services, health and sanitation and involvement in monitoring and evaluation of these projects. When an organization's management is committed to the implementation of DMM then it develops a culture that will be followed by all in the organization in the identification and analysis of relevant stakeholders leading to efficient services to customers. Implementation of DMM will lead to customer satisfaction, the number of connections will increase and the quality of water and sanitation will improve leading to increased customer base. Health and sanitation improvement will lead to fewer outbreaks of water borne diseases and better hygiene as a result of increased access to ablution blocks leading to reduced poverty levels. Monitoring and evaluation using the parameters of financial performance, group management and extension works on the existing network will lead to sustainability of DMM project as a result of involvement of all stakeholders'. However, for all these to be achieved then there has to be guiding policies and legal framework, technical capacity, availability of funds and good will from all the stakeholders' for DMM implementation to be a success.

## **2.8 Summary of Literature Review**

From the proceeding literature, there are benefits for the involvement of stakeholders' in the DMM project of water supply services in the informal settlements in Kisumu city. Some of the benefits are increased productivity and reduced community related conflicts. Improved living environment that are attractive, and there are chances of low residents' turnover, making it easier for the settlement to retain 'good people' in a competitive society environment. Some good people are more likely to decline staying in a settlement that jeopardizes the quality of their time with their families with regards to water and sanitation services. Based on this situation it is beneficial for KIWASCO to embrace this retention strategy if they are to motivate and retain people (Soonhe, 2001).

It is beneficial for the management both at the company and master operators to embrace consultation in the management of the project so as to create a feeling of ownership for all the stakeholders. This will keep all the stakeholders at the same level of information about the project making it easy for resolving conflicts in cases that they arise.

Nyalenda being an informal settlement makes individual household connection encounter a lot of challenges. These challenges include lack of funds, space for infrastructure

development and a population that does not see the importance of having individual household connection. The company, master operators and development partners should come up with strategies aimed at educating the residents to appreciate the efforts that are being made to increase accessibility of the services. Through this they will own the project and the challenges will be overcome.

Increasing accessibility of water services and a change of attitude by the residents will lead to improved health and sanitation status in the settlement. An all inclusive approach should be employed by all the stakeholders to ensure sustainability of DMM as a means of sustaining the health and sanitation status in the settlement. The literature reviewed shows that there is a positive correlation between access to reliable clean portable water and better health and sanitation in the settlement.

Participatory monitoring and evaluation mechanisms should be put in place to identify the existing gaps in the project and suggest ways of improvement. This should be done by all the stakeholders in a consultative environment that encourages openness to avoid unnecessary conflicts that may hinder the DMM from achieving its objectives.

It is therefore necessary that research on the influence of DMM of water supply implantation on stakeholders' involvement be carried out in Kisumu County. This will help unearth the hidden roles of managerial functions, implementation of DMM on water connectivity, health and sanitation and monitoring and evaluation systems to improve stakeholders' involvement in the implementation of DMM of water services.

## **2.9 Gaps in knowledge**

To address the unmet needs of water provision in the informal settlements, it is necessary to understand the strategies that would work to improve services and access among this crucial population and to identify gaps for future research. From the literature reviewed it reveals that studies have attempted to address these issues though none has looked specifically at DMM in the informal settlements. It is important to identify what works in increasing access to water and sanitation services and as well as gaps that require further research and/or public investment. The knowledge gap matrix (Table 2.1) summarized the identified gaps.

### Knowledge Gap Matrix

Variable	Indicators	Author/Year/Title	Gaps
Managerial Functions	Organizational Planning Staffing Organizational Control	Onyango, D (2012). SMALL SCALE PROVIDERS IN SERVICE DELIVERY. The Case of DMM in Nyalenda Kisumu.	The document gave the views of the company. This study will give the views of the customers
Connectivity	Customer satisfaction New connections Quality of water	Onyango, D (2012). SMALL SCALE PROVIDERS IN SERVICE DELIVERY. The Case of DMM in Nyalenda Kisumu.	The study was purely qualitative. The proposed study will be a mixture of both quantitative and qualitative
Health and sanitation	Improved health Access to ablution blocks Access to health services	Onyango, D (2012). SMALL SCALE PROVIDERS IN SERVICE DELIVERY. The Case of DMM in Nyalenda Kisumu.	The study did not explore the influence of DMM on Health. This study will explore the impact of DMM on health and sanitation
Monitoring and evaluation systems	Financial performance Group management Extension works	Onyango, D (2012). SMALL SCALE PROVIDERS IN SERVICE DELIVERY. The Case of DMM in Nyalenda Kisumu.	The study used secondary data. This study will use primary data

**Table 2.1: Knowledge Gap Matrix**



## **CHAPTER THREE**

### **3.0 RESEARCH DESIGN AND METHODOLOGY**

#### **3.1 Introduction**

This chapter focuses on the procedures employed in conducting this study. It presents the research design, target population, sample selection and sample size, data collection procedures, data analysis techniques, justification for the design as well as ethical considerations. To achieve this, this chapter elaborated on the research set-up, nature and sources of data, instruments used, sampling procedures, the methods of data collection and eventually analytical procedures adopted. As a prerequisite in every case, the study strived to give reasons for the choice of the procedure adapted by detailing the merits and demerits for each method used (Mouton and Morais, 1993).

#### **3.2 Research Design**

This study was conducted using cross sectional survey research design. A cross sectional sample survey is a present oriented methodology that is used to investigate population by selecting samples, collecting data at one point in time, in order to analyze and discover occurrence (Creswell, 2003; Mugenda and Mugenda, 2003). This is a “plan or blue print of the study” (Fouche, 2002; Hagan, 2000; Huysamen, 1993; Marshall and Rossman 1989), aimed at answering all the important and fundamental questions: “who, what, where, when and how the research was be conducted. It is aimed at gathering facts influencing the implementation of Delegated Management Model on stakeholders’ rather than manipulating the variables to establish cause- effect relations. Cross sectional survey enables the researcher to collect data from various participants at the same time in a short period. Cross-sectional survey is also preferred by the researcher because it is not costly to perform and does not need a lot of time. Although it cannot be used to analyze behavior, the researcher used observation. Research design is the arrangement of the conditions for collection and analysis of data to help in the interpretation of a given phenomenon or question at hand (Munala, 2009).

#### **3.3 Target Population**

The target population consisted of 2,332 households in the Delegated Management Model water supply (KIWASCO, 2016). Nyalenda informal settlement is an ideal location to study because it is characterized by lack of planning, high densities (on average about 150 housing units/hectare), poor infrastructure and a shortage of basic services such as water and sanitation (UN-HABITAT, 2004). Residents are people from different background with different

cultures combined together in one community. It is also ideal because of its accessibility to the researcher, which allows effective data collection, against the backdrop of financial and time limitations.

### **3.4 Sample size and sample selection**

Sampling is part of statistical practice that is concerned with random selection or unbiased individual observations within a population of individuals which is intended to yield some knowledge about a population of concern, especially for the purposes of making predictions based on inference. Researchers rarely survey the entire population for two reasons: the cost is too high, and the population is dynamic in that individuals making up a population may change overtime (Ader, Mellenbergh and Hand, 2008). Sampling is a procedure or technique of choosing a sub-group from a population to participate in a study (Ogula, 2005). It is a process of selecting a number of individuals for a study in such a way that the individuals selected represents the population from which they have been selected from. The study employed non probability sampling methods to obtain the respondents to participate in the study.

#### **3.4.1 Sample Size**

A sample size of 117 respondents selected from the target population was used in this study. The researcher used non-probability sampling technique. The sample size was determined by purposive sampling. Purposive sampling is a technique where the researcher uses his mind regarding the participants from whom he or she wants to collect the information (Oso and Onen, 2008). A sample is a smaller group or sub-group obtained from the accessible population (Mugenda and Mugenda, 1999). This research assumed a variability of 0.5 % with the desired confidence of 95% with a +/- 5% precision. Data was collected from 117 respondents with 5 Master Operators, 1 pro-poor department officer, 3 unit heads as key informants and analyzed using percentage technique.

#### **3.4.2 Sampling Procedure**

The respondents were selected using a register fed in Exel run random number generator. Stratified sampling technique was then used, where the sample collected was divided into Master Operator lines as stratus which helped justify that the researcher got reliable and adequate information. Sampling is a method of taking a portion of a population or universe and considering it a representative of that population or universe (Strydom and Venter, 2002).

### **3.5 Research Instruments**

This study used questionnaires and interviews as the instruments for collecting data. Questionnaires are a collection of written items to which the respondents are expected to react in writing (Oso and Onen, 2008). Questionnaires were administered to the respondents while interview guide was used to get responses from the key informants. Self administered, semi-structured questionnaires was used since the study was concerned with variables that can be directly observed and some that cannot be directly observed such as views, opinions, perceptions and feelings of the respondents. This enabled the researcher to obtain explanations to issues that were raised, as well as obtaining opinions for comparison purposes. Closed ended questions were used to ensure that the answers given are relevant. The researcher phrased questions clearly in order to make clear dimensions along which respondents were analyzed. In open ended questions, space was provided for relevant explanations to be provided by the respondents thus giving them the freedom to express their feelings. The method is considered effective for the study in that it creates confidentiality. By using the questionnaires, the physical presence of the researcher was not necessary as the questionnaires were self administered. The questionnaires were pre tested and corrected before distribution. Interview guide was also used in the study to get responses from key informants like KIWASCO pro-poor department staff and master operators for in-depth clarifications on DMM concept and other technical information.

#### **3.5.1 Piloting of the Instruments**

Since the researcher was going to use questionnaires in collecting data for his research work it is necessary to pilot that research instrument to see whether the research instrument chosen is effective and reliable. Self administered semi-structured questionnaires were administered to a few people to see whether or not it is the best research instrument in carrying out this research. The questionnaires were administered to six residents, two opinion leaders, one local leader and one staff member from KIWASCO who were not included among the respondents. This was to enable the researcher to obtain explanations to issues raised, as well as obtaining opinions for comparison purposes. Since interviewees were allowed to fill the questionnaires and return them, this gave them the freedom to express their feelings and create a sense of confidentiality. After the questionnaires had been pre tested and corrected, they were then distributed to the respondents.

### **3.5.2 Validity of the Instruments**

Since this study was concerned with some variables that could not be directly observed such as views, opinions and feelings of the respondents, the researcher chose to use questionnaires for his research. Questionnaires are the most valid research instrument because the researcher was able to get clarifications from the interviewees on issues and answers that he may not understand in the questionnaire. This enabled the researcher to draw conclusions that would take into consideration both the facts, opinions and feelings of the respondents. This study employed content validity which was achieved by conducting the research in the local settings to ensure that the findings reflect the reality of the life experiences of respondents accurately than contrived setting. Content validity was determined through pilot testing. A total of 12 questionnaires were administered randomly to households within the DMM area prior to the study. This helped the researcher to identify vague questions and unclear instructions. Pilot testing also helped the researcher to capture important comments and suggestions from the respondents that would enable him improve the instruments to ensure validity. Common responses were also captured and included in the questionnaire to limit the number of open-ended questions that would make the analysis complicated. Collected data in the pilot stage was prepared, analyzed and interpreted leading to further review of the instrument in readiness for the main data collection.

### **3.5.3 Reliability of the Instruments**

The researcher considered the use of questionnaires reliable because the questionnaires were designed using closed ended questions to ensure that the answers given are relevant. The researcher phrased questions clearly in order to make clear dimensions a long which respondents were analyzed. In open ended questions, space was provided for relevant explanations to be provided by the respondents thus giving them the freedom to express their feelings. The method is considered effective and reliable for the study. It creates confidentiality and the researcher could seek clarification later from the respondents on issues or responses given to the questions that he may not understand and vice versa. By using the questionnaires, the physical presence of the researcher was not necessary as the questionnaires were self administered. This research used test-retest technique where the instrument were first given to the respondents and collected. Then again after a period of one week the same questionnaire were administered to the respondents.

### **3.6 Data collection Procedure**

The data collection procedure used in this study firstly was, before the actual field work, a pre-test was undertaken a week prior. The aim was three-fold: first to test the research instruments, specifically the questionnaire, second, to establish contacts with the local leaders, master operators and KIWASCO pro-poor department and finally, familiarization with the area. This pre-survey was used to fine tune the instrument. After approval, the researcher proceeded with the research with the guidance of the supervisors. Once the proposal was approved, the researcher was given an introduction letter by the University of Nairobi to proceed to the research location-Nyalenda informal settlement, Kisumu to collect data. With the help of MOs and pro-poor programs coordinator at KIWASCO the researcher was introduced to the respondents who would participate in the study. The respondents were given the questionnaires and requested to voluntarily participate in the study by completing the questionnaires, the questionnaires were then collected. Before the questionnaires were administered to the respondents they were treated to an open session on the importance of policies and legal frameworks, management functions, DMM implementation, water connectivity, health and sanitation, M and E systems and the role of MOs, KIWASCO and local leaders and the results recorded. The researcher also used interviews on key informants and the answers recorded immediately as this ensured clarity and accuracy of the information given.

Quality control entails ensuring acceptable levels of validity and reliability of instruments. Research reliability is the relevance and persistence of the research results which guarantees the same research process whereby it can come out with the same results at different times. In this study, the reliability assurance technique of pretest and post test will be used to ensure research reliability. A training session was held for the research assistants on the key concepts and methodology of data collection and check list. A detailed planning process was undertaken to ensure a thorough coverage of the study area. The assistants were expected at the end of the field survey to give a report on any difficulty encountered in the survey. Local research assistants were used due to their experiences, knowledge of the local language and their ease to establish rapport with the locals. This however, did not prevent the researcher from being intensively involved in the data collection.

Upon meeting the sampled interviewee, the interviewer would outline the purpose of the survey and discuss the process involved in completing the questionnaire. The questions was then read to the respondent and his/her response entered by the interviewer. In case of any

clarification in meaning, this was done promptly to ensure understanding. The interviews varied in length but were generally kept between 10 and 15 minutes.

### **3.7 Data Analysis techniques**

The process of data analysis deals with the organization, interpretation and presentation of collected data. It is a postulate of how data was analyzed. Data analysis entails the separation of data into constituent parts or elements or an examination of data, to distinguish its component parts separately and in relation to the whole (Oso and Onen, 2008). Various qualitative and quantitative techniques were used in data analysis and presentation. In quantitative analysis, exploration of data through proportions, percentages, averages and tables was done in order to arrive at a general picture from which conclusions were made. The analyzed data was presented using statistical tables, graphs and other diagrams using percentage distribution.

Collected data was reviewed, cleaned and entered into a database daily to avoid accumulation with the researcher taking full responsibility of the process. Once data entry was completed, this file was considered as the master data base for the study. A copy of the data base was made as a precautionary measure to avoid data loss. This copy is what was used to analyze gathered data to make sense out of it. A statistical package of social scientists (SPSS) version 20 was used to analyze the data to produce descriptive statistics. Once the data analysis was done, the data was then presented in the form of descriptive statistics of frequencies and percentages. Frequency tables were used to demonstrate how each variable under test influenced stakeholders' involvement in the Delegated Management Model of water provision. Editing, coding and tabulations were then carried out. The data was then analyzed using quantitative techniques. Quantitative technique involves systematic analysis and interpretation of quantifiable data for the purposes of describing and explaining the behavior of phenomena. Finally the data was presented in form of frequency tables.

### **3.8 Ethical Considerations**

Approval for this study was sought from the University Of Nairobi School Of Graduate Studies, National Commission for Science, Technology and Innovation and further permission sought from Nyalenda informal settlement administration before the researcher embarks on the field work. Respondents' willingness and consent to participate in the study was sought first and their identities kept confidential. Professionalism was observed in this

study by avoiding plagiarism and fraud. This was done by acknowledging all the sources of information in the study.

## CHAPTER FOUR

### 4.0 DATA ANALYSIS, PRESENTATION, INTERPRETATION AND DISCUSSION

#### 4.1 Introduction

This chapter presents the findings discussed under thematic sub-sections in line with the study objectives. Demographic background of the participants is described. Presentation of data collected is also given. The main question that was to be answered by this study was; what are the influences of Delegated Management Model of water supply on Stakeholders Involvement in provision of water services in Kisumu City. Influences of managerial functions, water connectivity, health and sanitation and monitoring and evaluation are presented as they emerge from data collected.

#### 4.2 Questionnaire return rate

All the questionnaires administered to the respondents were returned ensuring 100% return rate as the researcher used assisted questionnaires.

#### 4.3 Demographic characteristics of the Respondents

This section presents the demographic characteristics of the respondents such as their gender, age, number of years connected, number of years stayed in Nyalenda and the highest level of education attained. The results are presented in tables and graphs generated from the field data.

##### 4.3.1 Distribution of the Respondents by Gender

Table 1 below presents the gender of the respondents who participated in the study.

**Table 4.1: Gender distribution of the Respondents**

Gender	Frequency	Percentage
Male	66	56.4
Female	51	43.6
<b>Total</b>	<b>117</b>	<b>100</b>



The distribution of the respondents shows that the majority of the respondents were male since they headed majority of the households in Nyalenda informal. According to the National Population and Housing census (2009), 73% of households are male headed, female headed households account for 26% while child headed households stand at 1%. According to the results in Table 1 above, 56.4% of the respondents were male while women constituted the remaining 43.6% of the respondents. Both the survey and KNBS census put male headed households at above 50% and thus they should be engaged more in the water provision since they are the providers for their families.

### 4.3.2 Distribution of the Respondents by Age

Table 2 below shows the age distribution of the respondents.

**Table 4.2: Age distribution of the respondents**

Age Group	Frequency	Percentage (%)
18-25 years	23	19.7
26-35 years	28	23.9
36-45 years	39	33.3
46-55 years	27	23.1
<b>Total</b>	<b>117</b>	<b>100</b>

The field results as presented in Table 2 above shows how the respondents were distributed according to their age groups. Most of the respondents were in the age bracket of 36 years to 45 years since it constituted 39 respondents accounting for 33.3% of the respondents, followed by age bracket of 26 to 35 years which constituted 28 respondents accounting for 23.9% of the respondents. The study also showed that 27 respondents or 23.1% of the respondents were of the age bracket of 46 years to 55 years while the remaining 19.7% or 23 respondents were between the ages of 18 years and 25 years.

### 4.3.3 Number of years stayed in Nyalenda

Table 3 below shows the number of years that the respondents have been residing in the informal settlement of Nyalenda.

**Table 4.3: Number of years stayed in Nyalenda**

<b>Number of years</b>	<b>Frequency</b>	<b>Percentage (%)</b>
0-5 years	66	56.4
6-10 years	24	20.5
11-15 years	17	14.5
15 years and above	10	8.5
<b>Total</b>	<b>117</b>	<b>100</b>

The findings in table 3 above shows that most of the respondents accounting for 56.4% or 66 of the respondents have resided in Nyalenda informal settlement for a period of 5 years or less than 5 years, 24 of the respondents accounting for 20.5% of the respondents have been residents of Nyalenda for a period of between 6 to 10 years. The results also indicated that 17 respondents accounting for 14.5% of the respondents have been residents of Nyalenda informal settlement for a period of between 11 and 15 years while 10 respondents or 8.5% of the respondents have been residents of Nyalenda informal settlement for a period of more than 15 years. This shows that most of the respondents are tenants or have acquired land recently. It is the bigger population that should be engaged in the project.

#### **4.3.4 Distribution of the Respondents by Level of their Education**

The table 4 below presents the academic qualifications of the respondents in this study.

**Table 4.4: Level of education of the respondents**

<b>Education level</b>	<b>Frequency</b>	<b>Percentage (%)</b>
Non Formal	6	5.1
Primary School level	61	52.1
Secondary School level	38	32.5
Tertiary	12	10.3
<b>Total</b>	<b>117</b>	<b>100</b>

The findings in Table 4 above shows that majority of the respondents 61 or 52.1% of the respondents attained Primary school level of education, 38 or 32.5% of the respondents attained Secondary school education while 12 or 10.3% of the respondents attained tertiary education. These are individuals who are holders of diplomas and degrees. The results from the study also shows that only 6 people accounting for 5.1% of the respondents did not go to any formal institution for education. Having majority of the respondents having basic levels of education clearly indicates that most of the residents are having connections as an income generating activity. They have water connections for commercial purposes and not for their own use. One of the village heads attributes this fact to the migration of residents on attaining higher education and subsequent employment of better paying jobs and influx of people in search of jobs. This is an indication that most residents have basic education that can only enable them to have informal jobs and small businesses and thus getting commercial water points as a way of generating income for their upkeep.

#### **4.4 Managerial Functions and Stakeholders Involvement**

The study attempted to establish how communication influences stakeholders' involvement. The respondents were requested to indicate the first person to inform them about the implementation on delegated management model of water and sanitation in the informal settlement of Nyalenda and to comment on their involvement by KIWASCO regarding DMM. The study wanted to know whether KIWASCO was communicating to the residents about the policy of DMM being implemented by the company in the settlement.

**Table 4.5: Respondents opinion on how communication influences stakeholders' involvement**

<b>Respondents</b>	<b>Responses</b>	<b>Percentage (%)</b>
Master Operator	60	51.3
KIWASCO staff	26	22.2
Others	31	26.5
<b>Total</b>	<b>117</b>	<b>100</b>

The findings as shown in Table 5 indicates that majority of residents 60 or 51.3% were informed about DMM by the Master Operators and not KIWASCO staff who were supposed to enlighten and take them through the organizations policies regarding water services delivery in the informal settlement especially those who were already connected to their line and were to be transferred to the DMM lines since that was going to affect them directly, and 26 or 22.2% were informed by KIWASCO officers about the DMM as stated in the company's policies on water service delivery in the informal settlement while 31 or 26.5% of those connected were informed of the same by other people not directly involved in the implementation of DMM.

The results of the Master operators' role on their Managerial Functions in DMM and subsequent communication of the same to the residents confirms that Master Operators were playing their role. This is in line with the findings of Funham and Gunter (1993) who found out that timely communication leads to customer satisfaction. However, more still needs to be done for their functions to be fully understood and embraced by the residents of the informal settlement which will in turn increase connectivity and thus access. There is need for KIWASCO to invest on community outreach programs so as to create a platform on which residents and the company can interact. However, according to the pro-poor department staffs interviewed, the staffs are few and there is need to increase the personnel so as to effectively perform what they are mandated to do. The pro-poor coordinator also pointed out that that they are working on a digitalization program for the Master Operators where the company

with the support of KISIP is equipping the MOs with computers and other communication materials to improve communication between the company and MOs and their customers. However without strengthening the capacity of MOs in terms of being able to efficiently and effectively using these equipments will adversely affect the financial management and cohesion of this groups since they will be required to move their offices to safer places which are more expensive and thus leading to conflicts within the groups. The MOs unanimously agree that despite the challenges posed by the introduction of technology, this is a step in the right direction.

#### 4.4.1 Organization Control and Stakeholders Involvement

Customer satisfaction is derived from a perception. The study attempted to establish if KIWASCO has the same control in dealing with all their customers. The respondents were requested to indicate whether they were being treated equally with customers from formal settlements by the company. Their response is summarized in the table 6

**Table 4.6: Respondents opinion on pattern of organization control**

<b>Views</b>	<b>Frequency</b>	<b>Percentage (%)</b>
Agree	8	6.8
Disagree	86	72.6
Don't Know	23	19.7
<b>Total</b>	<b>117</b>	<b>100</b>

From the study findings, 86 (72.6%) of the respondents believe that KIWASCO and by extension the MOs do not treat all their customers equally while 8(6.8%) of the respondents agreed that the company has the pattern of control for all their customers. The remaining 23 (19.7%) of the respondents did not know if the company is treating their customers equally as they had not noticed any difference.

The results on how KIWASCO handles their customers indicate that most customers in the informal settlement believed that the company is handling their issues differently with those in the formal settlement like Milimani estate. However, staffs of the company believed that this is not true as they are served from the same water line by the same staff.

#### 4.5 Delegated Management Model and Connectivity

This study further sought to establish how Delegate Management Model influences connectivity. The respondents were asked whether they knew about increase in water connection in the settlement. The results of the analysis are summarized below.

**Table 4.7: Respondents views on the influence of delegated management model and connectivity**

<b>Views</b>	<b>Frequency</b>	<b>Percentage (%)</b>
Agree	103	88
Don't Agree	4	3.4
Neutral	10	8.6
<b>Total</b>	<b>117</b>	<b>100</b>

The results of findings as shown in Table 7 above shows that majority of the respondents 103 accounting for 88% of the respondents believe that Delegated Management Model of water supply in the informal settlements has influenced the increase of water connections in the informal settlement of Nyalenda. This percentage of the respondents believed that the utility company's Implementation of DMM has enabled them to get connected as a result of reduced connection costs and water charges. However this is in contrast with WASREB (2009) that puts accessibility at 37%. 10 respondents or 8.6% of the respondents did not know if implementation of DMM in Nyalenda informal settlement has contributed to increased connectivity of water while 4 respondents or 3.4% of the respondents believed that KIWASCO's implementation of DMM in Nyalenda has not contributed to the increase in connectivity of water in the informal settlement of Nyalenda. The zonal supervisor for Nyalenda said that through DMM they have seen improvements' in customer base from these informal settlements because apart from providing access to water DMM has also provided an opportunity for the residents to make money from it by both the MOs and the kiosk owners. He also stated that this is just the first step but ultimately the aim of DMM is to enable the residents to get individual household connection which will eventually phase out the kiosks which are making water expensive for the end users. Most MOs believed that due to reduced

costs of connection and the company’s commitment to continual improvement of the model has led to the increase of water connections by the residents of Nyalenda.

The result on the influence of DMM and Connectivity of water confirms that Delegated Management Model has positively influenced the increase in water connectivity in the informal settlement of Nyalenda as a result of increased efficiency and effectiveness of water services.

#### 4.5.1 Organizational Commitment and Connectivity

This study further sought the views of the respondents on the influence of organizational commitment on water connectivity. The study sought to know whether KIWASCO is committed to provision of water to the informal settlement through DMM. The respondents were asked whether they felt that KIWASCO was fully committed to the provision water to the settlement. The results of the analysis are summarized in the table below.

**Table 4.8: Respondents views on Organizational Commitment**

<b>Views</b>	<b>Frequency</b>	<b>Percentage (%)</b>
Agree	92	78.63
Don’t Agree	21	17.95
Neutral	4	3.42
<b>Total</b>	<b>117</b>	<b>100</b>

From the study findings, 92 (78.62%) are in agreement that KIWASCO is fully committed to provision of water through DMM while 21 (17.95%) does not agree that KIWASCO is committed to provision of water services to the informal settlement. The remaining 4 respondents accounting for 3.42% doesn’t know about the company’s commitment.

This respondents believed that by coming up with a model of supply that is specific to the informal settlements shows that the company is committed to serving them. This is a view that is also shared by both the master operators and the company staff interviewed. This is in line with Onyango (2012) that puts KIWASCO as fully committed to the successful implementation of DMM. However, on the hand 21 respondents believe that the company is not committed to serving them but is doing it as a duty and in the process exploiting them.

This they say is because they are made to pay for losses that would otherwise be paid for by the company in the formal settlements. This are loses from leaks and bursts.

#### **4.6 Influence of DMM on Health and Sanitation**

According to WHO, there is urgent need for implementation of programs that ensures provision of clean water and safe water as it is associated with good health. This has necessitated water being classified as a human right. With this knowledge the researcher attempted to establish the quality of water in the informal settlement. The residents were asked whether they believed that their water is good and safe. The results of the analysis are summarized below.

**Table 4.9: Respondents opinion about DMM and quality of water**

<b>Views</b>	<b>Frequency</b>	<b>Percentage (%)</b>
Agree	77	65.81
Don't Agree	32	27.35
Neutral	8	6.84
<b>Total</b>	<b>117</b>	<b>100</b>

From the study findings, 77 (65.81%) of the respondents believe that water supplied to them is good and safe, 32 (27.35%) did not agree that the water supplied to them is safe while 8 (6.84%) did not know about the quality of water. These findings demonstrate that KIWASCO water is good and safe. However, 32 respondents believed that water supplied to them by KIWASCO is not safe and they are forced to boil and add water guard to their drinking water.

##### **4.6.1 Influence of DMM on Health and Sanitation**

The study team sought to establish the influence of Delegated management Model on health and sanitation. The respondents were asked whether DMM has enhanced health and sanitation. Analysis of their responses is summarized below.



**Table 4.10: Respondents views on the influence of DMM on health and sanitation**

<b>Views</b>	<b>Frequency</b>	<b>Percentage (%)</b>
Agree	68	58.1
Don't Agree	37	31.6
Neutral	12	10.3
<b>Total</b>	<b>117</b>	<b>100</b>

The results in Table 6 indicate that majority of the respondents 68 or 58.1% of the respondents agree that DMM has influenced improved health and sanitation in the informal settlements. While 37 or 31.6% of the respondents don't agree that DMM has improved health and sanitation of the residents of the informal settlement. 12 respondents accounting for 10.3 % of the respondents don't know whether or not DMM has improved health and sanitation in the informal settlement. The respondents attribute this to the fact that their families have not been falling sick due from the diseases attributed to poor quality of water. The respondents also said that they have not witnessed any outbreak of diseases like cholera that are attributed to the use of unclean water a fact that is corroborated by the ministry of health in the county. The report indicates that outbreaks of diseases associated with poor quality of water is mainly found in areas where residents use water fetched from the rivers, boreholes and shallow wells and not in areas using piped water served by KIWASCO (Kisumu County Public Health Report, 2015). A village head who've stayed in the settlement all his life explained how before the introduction of DMM members of his family often fell sick from using contaminated water a situation that affected the whole settlement a situation that he attributed to the long queues in the local dispensaries run by the county government. There were also local meetings and barazas that were organized to educate people on the importance of boiling drinking water and the use of water guard which is not the case today as water supplied by KIWASCO is safe. The Pro-poor coordinator explained that KIWASCO water is safe because they have a quality assurance department that tests the quality of water supplied. This is done by taking water sample randomly from different taps from different MO lines by quality assurance staff for testing in the laboratory. Although the MOs said that taking of water samples from their lines is not frequent as before, the pro-poor coordinator

attributed that to the fact that the DMM area is now big and they are taking samples from all those areas.

The results on the influence of DMM on health and sanitation in the informal settlement confirms that most residents regard DMM as having a positive influence on the improvement of health and sanitation in the informal settlements. However, safer waste disposal is still a challenge in the informal settlement and the company needs to look for innovative ways of addressing that issue since the settlement lacks sewer system. Constructing pit latrines is expensive as the water table is high and during rainy season this latrines always collapse. Both the respondents, MOs and the company both agree that the best way to address this is by constructing a sewer system in the settlement subject to the availability of funds.

#### **4.7 Monitoring and Evaluation and Delegated Management Model**

For a project to be successful there is need to monitor its progress and evaluate it based on its performance. This study sought to establish how the respondents rated KIWASCO monitoring and evaluation system. The results of the analysis are summarized below.

**Table 4.11: Respondents’ opinion on the influence of monitoring and evaluation on DMM**

<b>Views</b>	<b>Responses</b>	<b>Percentage (%)</b>
Good	15	12.8
Fair	17	15.4
Poor	85	72.6
<b>Total</b>	<b>117</b>	<b>100</b>

The results of findings as shown in Table 7 indicate that majority of the respondents 85 or 72.6% believe that the influence of Monitoring and Evaluation and Connectivity in DMM was poor. This percentage of the respondents believed that the utility providing company’s Monitoring and Evaluation through their staff on DMM was poor and thus a slow uptake in connectivity, and 17 respondents or 15.4% of the respondents were of the opinion that Monitoring and Evaluation from KIWASCO was fair and had some influence on the service delivery while 15 respondents or 12.8% of the respondents believed that KIWASCO’s

Monitoring and Evaluation of DMM was good and had influence on the Master Operators, this in turn translates to increased number of connectivity of water in the informal settlement of Nyalenda.

The majority of the respondents believed that the utility providing company's commitment in continually improving the number of connectivity through their staff on DMM was poor. This is because the time taken by the company to respond to their concerns exceeds what is stipulated in their service Charter of addressing issues within 12 hours. MOs said that despite KIWASCO insisting on them giving a monthly report about their operations and challenges, they rarely get feedback from the company. One MO in particular said that they have been complaining about low pressure in their line for more than two years now and the matter has not been addressed despite their customer base expansion. To address this complains, KIWASCO needs to employ participatory monitoring and evaluation in order to create ownership.

Some were of the opinion that the commitment from KIWASCO in Monitoring and Evaluating was fair and had some influence on the connectivity of customers in the informal settlement of Nyalenda since the company had staff assigned to the informal settlements and that it is this staffs that were letting the company down by not doing what is expected of them at the right time. While 12.8% of the respondents believed that KIWASCO's commitment Monitoring and Evaluation of DMM was good and had influence on customer connectivity in Master Operator lines. This in turn translates to better service delivery of water services in the informal settlement of Nyalenda leading to higher customer connectivity.

The result of the influence of Monitoring and Evaluation and Connectivity of water confirms that the influence of Monitoring and Evaluation and Connectivity was poor since KIWASCO does not monitor and evaluate their customers in the informal settlements to give support to DMM as it does other department especially those in the formal estates and thus the company needs to allocate more resources to the implementation of M and E in DMM areas.

#### **4.7.1 Customer Feedback and Quality Services**

Customer feedbacks are necessary for continual improvement of quality services. The researcher attempted to establish whether there was any engagement and channels for giving feedback between the company and its customers. The respondents were asked whether the company has engaged them in any way to give their feedback on the services rendered by the company. The findings of the analysis are summarized below.

**Table 12: Respondents opinion on customer feedback**

<b>Views</b>	<b>Frequency</b>	<b>Percentage (%)</b>
Agree	18	15.39
Disagree	91	77.77
Don't know	8	6.84
<b>Total</b>	<b>117</b>	<b>100</b>

From the study findings, 91(77.77%) of the respondents said that KIWASCO does not engage their customer so as to get feedback from them while 18 (15.38%) said that KIWASCO has ways and engages its customers for feedback. The remaining 8 (6.84%) of the respondents did not know if KIWASCO had any channel for customer feedback. The study findings show that majority respondents believed that KIWASCO does not engage them because even after complaining the company does not communicate back. However KIWASCO staff interviewed said that any formal complain registered with the company is always responded to within twenty four hours. This shows that most customers do not know the formal channels of registering complain with the company.

#### **4.8 Discussion of the Findings**

This research has identified various factors in the Delegated Management Model of water services that would influence stakeholders' involvement with regards to water services provision. Inadequate supply of water services stems from the very limited infrastructure coverage as a result of poor management in the informal settlement. Pipes laid in or before 1970 accounts for 81% of the total in terms of length (Suido and Koei, 1998). Given this duration of time, most pipes require frequent maintenance and rehabilitation to ensure that water losses are reduced to a minimum. According to Citizens Report Card on Urban Water and Sanitation Services in Kisumu, Kisumu suffers a high rate of non-revenue water (NRW) of 66% (SANA, 2007), compared with a well-run utility whose NRW tends to fall between 15% to 20%. It is paramount, therefore, that involvement of relevant stakeholders and a water supply model that would ensure effectiveness and efficiency leading to the reduction of NRW is a crucial step to both improving the financial health of both KIWASCO, Master Operators

and customers and to ensure that water treated is well utilized leading to a better supply model.

Private providers have thus emerged in various forms and are responding to demands not currently being met by KIWASCO. According to the Losai Situational Assessment Report (2010), there were about 62 KIWASCO registered water kiosks in Nyalenda but with the implementation of DMM there is none that is being operated by KIWASCO directly. The survey revealed that the private providers are tackling the challenge of WSS in various ways and this may be a short term option for many urban poor households. The important role being played by these providers in providing WSS in informal settlements is being recognized. The emergence of delegation for the management of water and sanitation in the informal settlements has emerged as the most efficient way to the provision of these essential services. In this model, MOs end up being the face of KIWASCO to the residents in the informal settlements acting as a sort of “franchise taker”. The MOs do not receive salaries but rather earn their money with the profit margins that they make from the sale of water. In this model, the parties have effectively entered into a PPP, since the MOs take over part of the work of the KIWASCO, and they do so in a way that responsibilities and risks are shared (Munala, 2009).

Through competitive bidding, competition is introduced to an environment that has all along been perceived to be a monopoly. Lack of perfect information can justify state intervention in favour of new and small businesses in order to create a ‘level playing field’ on which small and large organizations can compete fairly (Johnson, 2006). KIWASCO realized that the main reason for the growth in the alternative service market was its own failure to deliver adequate social and public service and so it is engaging and supporting independent service delivery arrangements where WSS are not adequate or non-existent. However the challenge still lies in the cost of connection, network maintenance, administration and management, rehabilitation and expansion and the attitude of the KIWASCO staff which was rated as poor by many respondents.

For most of the part of 20<sup>th</sup> Century, it was considered in public policy circles that Water and Sewerage networks were natural monopolies and provided public health benefits. When left to the private sector monopolies they would over-charge, under provide and ignore the public health benefits of WATSAN (McGranaham and Satterthwaite, 2006). The public sector, therefore, had to take control to prevent the abuse of monopoly powers, and to take account of the public health benefits of both water and sewerage. McGranaham and Satterthwaite (2006),

argue that governments making political commitments on universal coverage felt obliged to display this commitment in their plans, and to set water prices at levels considered affordable to all through stakeholders involvement which is a requirement of the constitution. They point out that as the century came to close, these assumptions came under challenge. Many organizations faced management problems since most of their staff were transferred to them from the municipalities which was associated with laxity and corruption (UWASAM, 2001). This supply management challenges has affected customers' satisfaction in the water services delivery to the informal settlement of Nyalenda.

Proponents of public sector involvement launched a sustained critique of public utilities and their failures in the 1990s and promoted regulated private alternatives. Especially in the low income settings, it was alleged, utilities are inclined to be inefficient, over staffed, susceptible to corruption, open to manipulation by politicians pursuing short term political ends, and unresponsive to consumer demands (McGranaham and Satterthwaite, 2006). The two authors point out, lack of stakeholders involvement, low water tariffs, far from ensuring that low income households can afford piped water, turn water distribution into patronage and contribute to utilities financial difficulties, often inhibiting further investment, and preventing water and sanitation networks from being extended to low income settlements. Privately run utilities, according to their supporters, would be cost-conscious, apolitical and demand responsive. According to Castro (2013), by February 2013 Master Operator lines accounted for 73% of billing in Nyalenda and the revenue collection efficiency (revenue collected divided by billing) between MOs and KIWASCO direct customers was identical. This revenue from water supplied to MOs has increased to 93% in 2017 (KIWASCO Revenue Report, 2017).

Further they argue that independent regulation, along with competition for concession or other contracts would prevent the abuse of monopoly powers. Therefore if private utilities could be regulated in the public interest, they would achieve what the public utilities had so perpetually failed to do. Not surprisingly, when measures began to be taken to promote more private sector participation, resistance emerged in both word and action. Concerns about private monopolies and the public interest re-emerged making opponents to insist that private participation would lead to high water and sewerage prices and focus efforts on serving those who could afford to pay, an indication of why most informal settlements lack this essential services. Others argue that water and sewerage are human rights (ICESCR, 2002; Salman and McInerney-Lankford, 2004), and that it is inherently and morally wrong for corporations to

make profits selling water or sewerage to people living in poverty (McGranaham and Satterthwaite, 2006).

Many respondents believed that a strong legal framework should be put in place to ensure that even the informal settlements are served since this are basic human rights (Constitution of Kenya, 2010). Many concurred that Master Operators are marketing DMM since they were the first ones to inform them about the possibility of getting connected. Further, the respondents believed that KIWASCO was fully committed to the implementation of DMM. However there is need for KIWASCO to open communication channels so as to reach more residents since 31.6 don't agree and 10.3 doesn't know. The government should also ensure that public utilities companies come up with policies that are clear on how they intended to provide water and sewerage services to the residents of the informal settlements and communicate the same since 51.3% of the respondents were only informed of the policy change through the Master Operators. A strong and clear legal framework should be put in place to enhance DMM as 88% of the respondents agree that it has facilitated an increase in connections and thus accessibility. KIWASCO also needs to improve their monitoring systems to identify why most respondents feel that it is poor on connections. This is because even where long-term investment contracts have been agreed upon, international development assistance and public resources can still account for a large proportion of the finances invested although figures rarely disaggregate different types of finance, it is very difficult to see exactly how much private finance is being committed (Budds and McGranahan, 2003).

The reality is that the efficiency and consumer responsiveness of private water and sewerage providers is not guaranteed by the market but depends upon the nature of their contract, the quality of their regulations as well as on the local context. Today, the major private companies themselves are no longer convinced; if they ever were that the poor are willing to pay the full costs of water and sewerage provision. An emerging school of thought is contesting that many of the obstacles to improving water and sewerage provision have nothing to do with whether utilities operators are private or public. They argue that a public sector having difficulties creating the right regulatory environment for public utilities is also likely to have trouble with private utilities (McGranahan and Satterthwaite, 2006). More over residents with insecure tenure, living in a difficult- to- reach locations, and lacking sufficient funds to invest in connections can have just as much trouble convincing private or public utilities to connect them.

Indeed, there is little indication that private companies that do face commercial pressures, and recover costs from user charges, are interested in investing large sums of money in the deprived settlements and neighborhoods where most of those without adequate water or sewerage mainly live. This could be the reason behind the lack of private finance that many had hoped would rescue the sector because it is very difficult to see exactly how much private finance is being committed in relation to public funds (Budds and McGranahan, 2003). Utilities companies should be committed to serving this informal settlements because they are losing a lot of revenues through leaks and bursts, water theft, vandalism of infrastructure and rivalries between different MOs since boundaries has not been defined. KIWASCO should be committed and support MOs, small scale water suppliers and informal vendors as they are more significant than the large private utility operators (McIntosh, 2003; Solo, 2003; Colingnon and Vezina, 2000).

The findings on the influence of DMM on new connections in water services confirmed that DMM has greatly influenced access but more commitment on DMM was necessary and the company needs to allocate more resources to the implementation of DMM. However the challenge still lies in the cost of connection, network maintenance, administration and management, rehabilitation and expansion and the attitude of the KIWASCO staff which was rated as poor by many respondents. The company should invest in building its image by training its staff and the Master operators and allocating to them resources that would enable them to perform their duties efficiently and effectively.



## **CHAPTER FIVE**

### **5.0 SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS**

#### **5.1 Introduction**

This chapter presents a summary of the findings arrived at in chapter four, conclusions, recommendations, contributions to knowledge and suggestions for future research.

#### **5.2 Summary of findings**

This section presents the main findings of the study. The study examined the influence of Delegated Management Model on stakeholders' involvement on provision of water services in Kisumu City, Kenya. It particularly investigated to what extent Managerial functions as a component of DMM influence stakeholders involvement, to what extent DMM influences connectivity of water services, assess DMM on health and sanitation and to what extent monitoring and evaluation influences stakeholders involvement.

##### **5.2.1 Managerial functions and stakeholders involvement**

The first objective was to determine the views of the respondents on the extent to which managerial functions influence stakeholders' involvement in water services delivery to the residents of Nyalenda informal settlement in Kisumu city. The analysis of the findings from the study indicates that respondents regard believes that master operators are playing their role in implementation of DMM with as 51.3 % of the respondents indicating so. This is because the MOs were the first people to reach out to them and informed them about DMM. The study therefore, established that the master operators are playing their managerial functions by engaging stakeholders in the delegated management model in the informal settlement of Nyalenda.

##### **5.2.2 Delegated management model and connectivity**

The study established that delegated management model has enhanced connectivity and thus increase to water services. This is represented by 88% of the respondents who indicated that DMM has made easy to get connected water services. The analysis confirmed that DMM was good and has positive influence on the number of connectivity of water and services to the residents of Nyalenda informal settlement.

### **5.2.3 Delegated management model and health and sanitation**

Findings by the researcher in this study imply that since the introduction of DMM there has never been an outbreak of water borne diseases. Respondents believe that access to water through the model has significantly reduced diseases associated with poor access and quality of water. A total of 58.1% of the respondents agree that this reduction can be attributed to the model.

However respondents believe that some KIWASCO employees are not committed to the full implementation of DMM for fear that they may be rendered redundant if the model is successful. This finding therefore implies that all stakeholders' commitment is equally crucial to quality services of water and sanitation in the informal settlement of Nyalenda that would thus lead to better health and sanitation.

### **5.2.4 Monitoring and evaluation and delegated management model**

The respondents believe that M and E is crucial and plays a very important role in the success of DMM. However they believe that KIWASCO through its employees is not taking it seriously and has left all the work to the Master operators who lack the capacity and the technical know-how. 72.6% of the respondents believe that KIWASCO's M and E system is poor since no research has ever been done by Kisumu Water and Sewerage Company regarding the company policies with regard to DMM. This could have revealed to the company the views of the residents' long time ago.

The study has established that MOs are carrying out their roles in DMM. These roles include communicating and creating awareness to the residents is rated as good by the respondents. Most of the residents confirmed that they were only informed about the DMM model by the master operators other than the staff from KIWASCO who they believed could have been the first people to inform them as their service providers.

Organizational policies are nothing or worthless words on paper if not enforced (Ogangah, 2009). KIWASCO staffs should implement the company policies in order to advance the goals of the company so that the company can gain from it. This culture should be inculcated in all employees since organizational culture entails the collection of values and norms that are shared by people and groups in an organization that controls the way they interact with each other, and with stakeholders outside the organization. The management needs to improve the culture which is rated as poor in this study. The integration is the expansion of pro-poor

department's role to achieve the necessary coordination and enforcement so that the organization remains whole. Research should be carried out so that new features are added to accommodate each and every employee and stakeholders with their different culture and new forms of communication and operations to be established to ensure the necessary "Corporate glue" is achieved.

These findings by the researcher show that Kisumu Water and Sewerage Company is committed to its company policies. However they should ensure that their officers are committed to their work, which includes the DMM. Commitment therefore should be the management priority concern. The factors that reduce or affect employees' commitment should be determined and controlled.

The role of M and E has never been used nor the opinion of master operator and other stakeholders taken into consideration. M and E should be used as a tool to identify organization and employees problems, monitoring programmes, evaluating programs impact and coming up with options for improvement. M and E is really important to Kisumu Water and Sewerage Company to get the root course of the negative attitude of the field staff regarding DMM.

### **5.3 Conclusions**

This study investigated the influence of Delegated Management Model on stakeholders' involvement in provision of water services in Kisumu city, Kenya. The study set out to establish to what extent managerial functions as a component of DMM influence stakeholders involvement in provision of water services. After the study, the researcher established that unsupportive KIWASCO staff did not communicate to the residents about the company's DMM policy. Based on the findings that showed that most respondents were informed of DMM by master operators and other people other than KIWASCO staff charged with the responsibility. The researcher recommends that KIWASCO should create a department in the company that deals with the informal settlement as opposed to the current situation where pro-poor personnel in the company are under commercial department. This will ensure that the flow of information and handling of DMM matters are done by that department to avoid duplication of duties and conflict of targets since as a department they have targets for sales and at the same time they need to act in a pro-poor manner. This pro-poor department would strike a balance between commercialization and service delivery.

The study also investigated the extent to which DMM influences connectivity of water services in the informal settlements within Kisumu city. Majority of the respondents agreed that the model is good and workable with good policies but lack a clear framework for engagement. However, the company's staffs that were interviewed said that the policies were progressive and pro-poor but alluded to the fact that most people targeted by those policies were not aware of them. The pro-poor coordinator also said that the policies were not all inclusive as not all stakeholders were involved in coming up with them. Despite the fact that most of the respondents were not aware of the policies guiding DMM an overwhelming majority of 88% agreed that DMM has positively influenced the increase in water connections. The researcher therefore recommends that DMM should be implemented in other informal areas because it does not only increase accessibility to water services but also empowers the residents economically. The researcher also recommends that master operators capacity should be enhanced since they are the face of the company on the ground and deal with customers directly on behalf of the company. Their capacity should be built on areas of marketing and communication for benefits of DMM to be realized fully.

The study also investigated the influence of DMM on Health and Sanitation in the informal settlements in Kisumu city. Findings revealed that DMM has greatly improved the state of health and sanitation as no outbreak of water borne diseases has ever been reported in areas where the model is in use. However, the findings also revealed that lack of commitment by some staff of Kisumu Water and Sewerage Company on DMM policy in Nyalenda, had diverse effects on the general master operator output in the implementation of DMM. This lack of commitment especially from the lower cadre employees has led to a misunderstanding and sometimes animosity between the lower cadre staff and the Master Operators. This has sometimes affected the quality of service and thus compromising the state of health and sanitation. Lastly, the study explored the extent to which monitoring and evaluation as a component of DMM influences stakeholders' involvement in the informal settlements in Kisumu city. It was established that majority of the respondents regard monitoring and evaluation role by the company in DMM areas as poor. In general, the study established that unrecognizing of the stakeholders' opinion and suggestions affect the performance of Delegated Management Model. The study therefore concludes that stakeholders' involvement is crucial to the success of DMM and has an impact on the service delivery of water and sanitation in Nyalenda informal settlement. It also influences the willingness of the customers to connect to Master Operator lines and remain customers of the company through the DMM,

master operators readiness and willingness to exert more effort on behalf of the company to ensure success of DMM.

#### **5.4 Recommendations**

The study has shown that KIWASCOs treatment of key stakeholders' especially the master operators has a direct bearing on the master operators' performance, loyalty to the company, increase in connections, enhanced health and sanitation and the image of the company in total.

The following recommendations are made: First, the researcher recommends that the management of Kisumu Water and Sewerage Company should make sure that the master operators and their employees are aware of the company policies on DMM and are willing to implement them. The master operators and KIWASCO field staff should be educated on the influence of stakeholders' involvement in the success of DMM.

Secondly, the management should try incorporating all the stakeholders' opinions to form one all inclusive policies in service delivery. The management should try to introduce the culture of excellence at the departmental level and the pro-poor department should have their own operational culture that would be incorporated in the management of the organization and then slowly the whole organization will have one culture of efficiency and effectiveness since Culture is learned over a period of time (Schein, 1985).

The management should be committed to their company policies in order to win other stakeholders support. Commitment, according to Salancik (1997), can be increased and harnessed to obtain support for organizational ends and interests through such ploys as participation in decisions about actions. The management of KIWASCO should support the master operators and field employees because there is mutual benefit of investing in the employer-employee relationship and the relationship between partners in a contract. The management of KIWASCO should make use of research. Complains should be investigated and errors corrected, complains should be acknowledged and passed on to those who are directly concerned. While inquires, requests and suggestions should be considered frequently and acted on promptly (Black, 1997).

Lastly, KIWASCO should establish a pro-poor department because it is necessary and should be mandated with the responsibility of coming up with an all inclusive policies that would guide the operations of DMM operations. A strong legal framework should be put in place to ensure conformity to these policies.

### **5.5 Suggestion for Further Research**

Further research should be conducted to establish the factors that are causing fear among the community members and Kisumu Water and Sewerage company's staff in realization of a successful DMM implementation. This may lead to a change of attitude in both the staff and residents of informal settlements regarding DMM.

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# APPENDICES

## APPENDIX I

### RESEARCH QUESTIONNAIRE

#### QUESTIONNAIRE FOR THE RESPONDENTS

##### Introduction

The purpose of this questionnaire is to collect data for purely academic purposes. The study seeks to determine the influence of Delegated Management Model Implementation on stakeholders' involvement in provision of water services in Kisumu city. Your cooperation will be highly appreciated. Please note that the Information you will provide will be used for academic work only.

##### Instructions:

Kindly answer all the questions in all the sections in this questionnaire.

Please tick where appropriate.

#### PART 1 SOCIO-DEMOGRAPHIC INFORMATION

1. What is your name (Optional)
2. Gender Male  Female  Others.....
3. Age .....
4. How long have you been a resident of Nyalenda?
5. What is the highest level of education attained? .....

#### PART II GENERAL QUESTIONS

1. Who was the first person to inform you about Delegated Management Model?

KIWASCO staff  Master operator  others

2. Have you been connected to DMM line?

Yes  No



3. What is your opinion on DMM line management?

Positive  Negative

If positive why?

.....  
.....  
.....  
.....  
.....

**PART III SPECIFIC QUESTIONS**

1. Consumers have ways of communicating with KIWASCO in case they have a problem. (A) Agree (B) Disagree (C) Don't know
2. KIWASCO has the same pattern of norms that control the way they interact with customers and other stakeholders? (A) Agree (B) Disagree (C) Don't know
3. There is increase in water connectivity in DMM lines since DMM was introduced? (A) Agree (B) Disagree (C) Don't know
4. KIWASCO is fully committed to provision of water services to the residents of the informal settlements? (A) Agree (B) Disagree (C) Don't know
5. Am sure you are aware of the importance of quality water. DMM water quality is good and safe. (A) Agree (B) Disagree (C) Don't know
6. DMM has enhanced health and sanitation since there has not been any outbreaks of water related illness in the settlement in the recent past? (A) yes (B) No (C) Not aware
7. How do you rate KIWASCO M and E system? (A) Good (B) Fair (C) Poor
8. KIWASCO has been engaging customers to give feedbacks. (A) Agree (B) Disagree (C) Don't know

## APPENDIX II

### INTERVIEW SCHEDULE FOR MASTER OPERATORS

This schedule is being used to solicit views on the influence of DMM on stakeholders' involvement in provision of Water and Sanitation services in the informal settlements in Kisumu city. This research is purely academic and the information provided shall be kept confidential.

Interviewee No: ..... Date: ..... Location: .....

#### Demographic profile

Position held: ..... Period worked in the organization: .....

What is your age: ..... What is your gender: ..... What is the highest level of education you attained? .....

1. Please outline a brief history of your organization in this settlement?
2. When did your organization set up the water services here?
3. What made you begin this water provision services here?
4. Is this the only place you have this kind of services?

#### Quantity evaluation

1. Approximately how many people do you serve with water and sanitation services?
2. Do you charge the same price to all your customers?
3. Many people are getting household connections. What has led to this development?

#### Quality evaluation

1. How do you ensure that the quality of water and sanitation services you provide to your customers meets the required standards?
2. Do you take samples of the water to the laboratory for quality checks?
3. Do officers either for the public health department or KIWASCO visit here for quality checks? How often?

4. How does KIWASCO help the residents of the informal settlement of Nyalenda, not covered by the sewerage system, dispose of their sewerage?

### **Relationship Evaluation**

1. Do you need a license to operate?
2. How long does it take to get a license once you have been selected as an MO?
3. How much is required in fees for operating as an MO?
4. How would you describe your working relationship with KIWASCO?
5. Does KIWASCO give any restriction as far as WSS is concerned?
6. Do you have any problems with KIWASCO regulations?

### **General Evaluation**

1. What challenges do you face in your water and sanitation business?
2. What do you think about the role of KIWASCO in WSS delivery?
3. What can be done to improve the WSS in this informal settlement of Nyalenda?

## APPENDIX III

### INTERVIEW GUIDE FOR WSS UTILITY OFFICIALS

This schedule is being used to solicit views on DMM and PARTNERSHIPS in Water and Sanitation services in the informal settlements in Kisumu city. This research is purely academic and the information provided shall be kept confidential.

#### Demographic profile

Position held: ..... Period worked in the organization: .....

Age: ..... Gender: ..... What is the highest level of education attained? .....

1. Could you briefly comment about the inception of KIWASCO?
2. What percentage of the settlement of Nyalenda has KIWASCO covered with piped WSS services?

#### Quantity Evaluation

1. Which areas are you currently supplying with water in the informal settlement of Nyalenda using DMM?
2. I have seen many people having commercial water points. What has led to the mushrooming of these commercial vendors?
3. What is the official price of water supplied by KIWASCO?

#### Quality Evaluation

1. Do you have enough public health officers to inspect all the water points in the informal settlement of Nyalenda? How regularly?
2. I noticed some wells dug very close to the houses, some very close to latrines. This is an area of concern. What are you doing about it?
3. In the recent past, has there been any outbreak of a water related illness in the informal settlement of Nyalenda?
4. How does KIWASCO help the residents of the informal settlements of Kisumu, not covered by the sewerage system, dispose of their sewerage? What do you charge?

### **Relationship Evaluation**

1. What is the fundamental difference between KIWASCO and the water departments in the municipality councils before it?
2. Is your company involved in the WSS provision to the residents of the informal settlements of Nyalenda?
3. Do you have any partnership arrangements with the private service providers in the informal settlement of Nyalenda?
4. Do you license private providers who provide WSS in the informal settlement of Nyalenda?
5. What is the process of applying for a license and how long does it take to obtain one?
6. Do you have any incentives for the private WSS providers in the informal settlement of Nyalenda?
7. Do you receive complaints from the residents and MOs in the informal settlement of Nyalenda? What is your response to them?

### **General Evaluation**

1. What are the biggest challenges KIWASCO is facing at the moment as far as its efforts of providing WSS to the residents in the informal settlement of Nyalenda is concerned?
2. What are the future plans of KIWASCO as far as provision of WSS to the informal settlement of Nyalenda is concerned?

## APPENDIX IV

### RESEARCH WORK PLAN

November 2016: Presentation of research topic to the supervisor for approval.

November 2016/ March 2017: Development of the research proposal

April/ July 2017: Proposal approval and defense

August/September 2017: Collection of data, analysis and presentation.

October/ November 2017: Approval of the research by the supervisor and research defense

	<b>Nov - March</b>	<b>April-July</b>	<b>Aug - Sept</b>	<b>Oct- Nov</b>
Proposal presentation to the supervisor for approval				
Development of the research proposal				
Proposal approval and defense				
Collection, analysis and presentation of data				
Approval of the research by the supervisor and defense				

## APPENDIX V

### THE BUDGET

No.	Item	Description	Estimated cost(Kshs.)
1.	Stationery	i) 6 reams of paper @ 490 ii) Flash disk @1,000 iii) Writing materials @ 3,200	2,940 1,000 3,200
2.	Library	Internet surfing	2,500
3.	Support services	i)Secretarial services ii)Photocopy @ 198 iii) Binding services @ 500 iv) Printing services @980 v) Transport @ 15,000 vi) Communication @ 3,000	15,000 4,158 5,500 20,500 15,000 3,000
4.	Research permits	NACOSTI Research permit@1,000	1,000
	Miscellaneous expenses	10% of the total cost	6,029.8
<b>Total</b>			<b>66,327.8</b>

## APPENDIX VI

### INTRODUCTION LETTER BY THE UNIVERSITY



**UNIVERSITY OF NAIROBI  
OPEN, DISTANCE AND e-LEARNING  
SCHOOL OF OPEN DISTANCE LEARNING**

Our Ref.: UON/CEES/KSM/1/16

Telephone: Kisumu 057-2021534

University Of Nairobi Plaza  
Oginga Odinga Street  
P.O. Box 825,  
KISUMU Kenya

25<sup>TH</sup> August, 2017

TO WHOM IT MAY CONCERN

**RE: ABDILLAHI SWALEH CHEBII - REG NO: L50/83526/2015**

This is to inform you that the above named **Abdillahi swaleh** is a student in the University of Nairobi, Open, Distance and e-learning centre, School of Open and Distance learning, Kisumu Campus, pursuing a masters in project planning and management

**Edwin** has completed his course work and examinations successfully and is now undertaking his Research project which is a pre-requisite for the course. The Research is entitled "*influence of delegated management model implementation on stakeholders involvement in provision of water services in Kisumu city, Kenya*". The purpose of this letter therefore is to request you to allow the student to access the data or information he may need for purpose of this study. The data is required for his academic purposes only and not for any other reasons.

We would appreciate any assistance that may be given to enable him carry out the study.

Yours faithfully,

  
**Dr. Stephen Okelo, PhD  
CO-ODINATOR ODeL  
KISUMU CAMPUS**



**ISO 9001: 2008 CERTIFIED**

*The Fountain of Knowledge Providing Leadership in Academic Excellence*



## APPENDIX VII

### RESEARCH CLEARANCE PERMIT

**THIS IS TO CERTIFY THAT:**  
**MR. ABDILLAHI SWALEH CHEBII**  
of UNIVERSITY OF NAIROBI, 2045-50100  
KAKAMEGA, has been permitted to  
conduct research in **Kisumu County**

**Permit No : NACOSTI/P/17/41229/20197**  
**Date Of Issue : 22nd November, 2017**  
**Fee Received :Ksh 1000**

**on the topic: INFLUENCE OF  
DELEGATED MANAGEMENT MODEL  
IMPLEMENTATION ON STAKEHOLDERS  
INVOLVEMENT IN PROVISION OF WATER  
SERVICES IN KISUMU CITY, KENYA**

**for the period ending:  
20th November, 2018**



**Applicant's  
Signature**



**J.P. Kalerwa**

**Director General  
National Commission for Science,  
Technology & Innovation**

#### CONDITIONS

1. The License is valid for the proposed research, research site specified period.
2. Both the Licence and any rights thereunder are non-transferable.
3. Upon request of the Commission, the Licensee shall submit a progress report.
4. The Licensee shall report to the County Director of Education and County Governor in the area of research before commencement of the research.
5. Excavation, filming and collection of specimens are subject to further permissions from relevant Government agencies.
6. This Licence does not give authority to transfer research materials.
7. The Licensee shall submit two (2) hard copies and upload a soft copy of their final report.
8. The Commission reserves the right to modify the conditions of this Licence including its cancellation without prior notice.



**REPUBLIC OF KENYA**



**National Commission for Science,  
Technology and Innovation**

**RESEARCH CLEARANCE  
PERMIT**

**Serial No.A 16607**

**CONDITIONS: see back page**

## APPENDIX VIII

### LETTER OF AUTHORIZATION



#### NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

Telephone: 020 400 7000,  
0713 788787,0735404245  
Fax: +254-20-318245,318249  
Email: dg@nacosti.go.ke  
Website: www.nacosti.go.ke  
When replying please quote

NACOSTI, Upper Kabete  
Off Waiyaki Way  
P.O. Box 30623-00100  
NAIROBI-KENYA

Ref. No. **NACOSTI/P/17/41229/20197**

Date: **22<sup>nd</sup> November, 2017**

Abdillahi Swaleh Chebii  
University of Nairobi  
P.O Box 30197-00100  
**NAIROBI.**

#### **RE: RESEARCH AUTHORIZATION**

Following your application for authority to carry out research on *“Influence of delegated management model implementation on stakeholders involvement in provision of water services in Kisumu City, Kenya”* I am pleased to inform you that you have been authorized to undertake research in **Kisumu County** for the period ending **20<sup>th</sup> November, 2018.**

You are advised to report to **the County Commissioner and the County Director of Education, Kisumu County** before embarking on the research project.

Kindly note that, as an applicant who has been licensed under the Science, Technology and Innovation Act, 2013 to conduct research in Kenya, you shall deposit **a copy** of the final research report to the Commission within **one year** of completion. The soft copy of the same should be submitted through the Online Research Information System.

*G.P. Kalerwa*

**GODFREY P. KALERWA MSc., MBA, MKIM  
FOR: DIRECTOR-GENERAL/CEO**

Copy to:

The County Commissioner  
Kisumu County.

The County Director of Education  
Kisumu County.

## APPENDIX IX

### MAP OF THE STUDY AREA (KISUMU)

Map 2: Kisumu County Administrative/Political Boundaries



Source: Kenya National Bureau of Statistics, 2010

## APPENDIX X

### ORIGINALITY REPORT

# INFLUENCE OF DELEGATED MANAGEMENT MODEL ON STAKEHOLDERS INVOLVEMENT IN PROVISION OF WATER SERVICES IN KISUMU CITY, KENYA

#### ORIGINALITY REPORT

**14%**

SIMILARITY INDEX

**10%**

INTERNET SOURCES

**1%**

PUBLICATIONS

**10%**

STUDENT PAPERS

#### PRIMARY SOURCES

1

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Internet Source

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2

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Submitted to Newcastle College, Tyne & Wear

Student Paper

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Submitted to United States International  
University

Student Paper

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