

**SOCIAL FACTORS INFLUENCING THE PERFORMANCE OF WATER  
PROJECTS:  
THE CASE OF GATAMATHI WATER AND SANITATION COMPANY IN  
MURANG'A COUNTY, KENYA**

By

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**A Research Project Report Submitted in Partial Fulfillment of the Requirements  
for the Award of the Degree of Master of Arts in Project Planning and  
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## DECLARATION

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

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

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## **DEDICATION**

This work is dedicated to my wife Rachel, my three daughters; Lillian, Elizabeth and Millicent, for their invaluable understanding and support in this academic journey.

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## **LIST OF ABBREVIATIONS AND ACRONYMS**

<b>ADB</b>	-	African Development Bank
<b>BWR</b>	-	Basic Water Requirement
<b>ICWE</b>	-	International Conference on Water and the Environment
<b>IWRM</b>	-	Integrated Water Resources Management
<b>MDGs</b>	-	Millennium Development Goals
<b>MWI</b>	-	Ministry of Water and Irrigation
<b>NWRMS</b>	-	National Water Resources Management Strategy
<b>UNCED</b>	-	United Nations Conference on Environment and Development
<b>WHO</b>	-	World Health Organization
<b>WRM</b>	-	Water Resource Management
<b>WSS</b>	-	Water Supply Services

## **ABSTRACT**

This study aimed at investigating the social factors influencing the performance of Gatamathi Water and Sanitation Company. The study was specifically assessing the social effects of accessibility, community participation, sustainability, motivation of stakeholders and personal characteristics on the performance of water project. The researcher carried out a case study of Gatamathi Water and Sanitation Company in Murang'a County. The researcher adopted a single case design. This design therefore helped to investigate the social factors on the performance of water project. An intensive study was done gearing towards a thorough understanding of factors of limited to generalizability. In the study only few units were involved and not the entire population. The study was causal study which intended to establish causal effects of the performance of water project. The researcher used several theories for external validity. The study adopted quantitative research approach with descriptive and numerical data. The researcher used triangulation (mixing the methodology) to strengthens the study design by combining several methodologies. Data triangulation was also used in collecting primary and secondary data sources. Multiple methods in sampling techniques, instruments and statistical analysis were utilized in order to enhance the study. The target population of this study was made of Top Management, Middle level Managers, Supervisors, other workers and consumers of Gatamathi Water and Sanitation Company. The population list indicates that there were 240 employees and consumers whom the company involved in its operations. The researcher got a representative sample from various categories of employees and consumers. The study used a sample size of eighty employees and consumers from a total population of 240 individuals. This sample was arrived at through probability sampling technique, where simple stratified random sampling technique was employed by the researcher to get the necessary conclusion of the research. Several research instruments were employed to enrich the study. Data was analysed through SPSS data software and presented in tables, graphs and figures. The summary, conclusion and recommendation of the study were based on the finding of the research. The study established that sustainability, community participation, accessibility and motivation were social factors which had a significant influence at the selected level of confidence in the performance of water projects.

It is hoped that the lesson provided by the study will be useful for the improvement of water planning and management.

## CHAPTER ONE

### INTRODUCTION

#### 1.1 Background of the Study

Water resources are essential to life on earth and play a key role in the development and functioning of society. Water provides habitat and sustenance for a rich diversity of plant and animal species that make up aquatic and riparian ecosystems. It provides the basis for many of the goods and services received by society in terms of basic resource for activities such as irrigation, livestock production, fisheries, aquaculture, and hydroelectric power. It is adequate in households, businesses and manufacturing in prerequisite of economic growth. Clean water and sanitation are strongly needed for reducing the incidence of waterborne diseases.

Population growth is the most important demographic trend affecting water resources. The past two centuries have seen dramatic increases in world population, from one billion in 1800 to six billion at the close of the 20th century. More people and increasing consumption of food, consumer goods, and water for domestic use have created demands for clean freshwater that in many areas exceed nature's capacity to deliver through the hydrological cycle. In today's world, much water is wasted or used inefficiently, and often demand is growing faster than the supply can be replenished by nature. The growing scarcity and competition for water stands as a major threat to future advances in poverty alleviation. However, while competition over water resources can be a source of conflict, history has shown that shared water can also be a catalyst for cooperation, (DSS Tools, 2006).

According to the Millennium Ecosystem Assessment, one-third of the world's population is now subject to water scarcity, and population facing water scarcity will double over the next 30 years. According to (UNDP/UNSO, 1997 and White et al., 2002) in Africa decrease of water availability can have exponential negative effects on the human population well-being. Water scarcity have a strong burden for women, and to a lesser extent to children, which are the main actors in charge of draw, transport, and store of water for household and animal use. However, their

involvement in managing water resource is still nowadays very weak (Morna, 2000; Narayan, 1993).

The agricultural production systems require large amounts of water. The “virtual water” contained in the products is a significant concept, especially for water-scarce regions, in which is important to adapt the production systems to products less intensive in water. Analyzing the relations between “virtual water” and physical water can be a significant contribution for achieving a balance of economic and population growth, as well as towards ecological sustainability. The importance of virtual water lies with its potential to balance water-rich and water-poor regions, at national and global levels, through the regional and international trade in agricultural products (Yasser, 2004). Naturally, this process implies socio-economic changes that should be thoroughly analyzed. Nevertheless, “virtual water” trade must be faced as an instrument to achieve water security and efficient water use (Hoekstra, 2003).

Agricultural systems are at the root of specific ecological, economic and social concerns that should be addressed to move towards more sustainable agricultural practices. Water is the principal resource to support the development of agriculture, and it has been a major limiting factor when scarce or mismanaged. Negative effects of current agricultural practices are a growing problem, and not only in arid and semi-arid regions, and include the following (Khor, 2004): decline in soil productivity and desertification due to overgrazing; salinisation and contamination of ground and surface waters; overuse of surface and ground water for irrigation; little control of farmers over farm prices; loss of small-size farms and farmers, contributing to the disintegration of rural communities and local marketing systems.

In most regions, some strategies should be stressed: improving water conservation and storage measures; providing incentives for selection of drought-tolerant crop species; using reduced volume irrigation systems; managing crops to reduce water loss; and in extreme cases not planting at all (Ch’ing, 2002). Sustainable agriculture can deliver substantial increases in food production at low cost. It can be economically, environmentally and socially viable, and contribute positively to local livelihoods.

According to ADB (2000) the main challenges identified under the Vision included water scarcity, lack of affordable access to clean drinking water and adequate hygiene, particularly for the most vulnerable, the poor, women and children and increased water need for food production to provide adequate nutrition. Important

causes for these challenges include the deterioration of fresh water quality due to environmental degradation, increased competition and dispute over shared water resources, decline in investment and fragmented water resources management at local, national and regional level. The sets of strategies for the achievement of the goals include Integrated Water Resources Management (IWRM), participatory institutional mechanisms provision of incentives for resources mobilization and technology change, and mobilization of political will. The targets to be achieved during the period relate to the management of water resources so as to reduce extreme poverty, reduce mortality rates of infants and children, reverse the loss of environmental resources, increase access to hygiene education, raise the levels of water productivity, reduce the risk from floods and generally improve the health of fresh water ecosystem.

According to Osinde N. R. (2007) improving to access to water supply and appropriate sanitation is fundamental to elimination of poverty and achievement of Millennium Development Goals (MDG). Human rights to water entitles to everyone to sufficient, affordable, physically accessible, safe and acceptable water for personal and domestic use. In Kenya access to water for most urban and rural group remain very poor. For the un-served and marginalized groups to realize their human rights to water require inclusive mechanisms for improving participation, efficiency, transparency and accountability at individual, household, community, institutional and organizational level. Whatever the approach capacity building must encompass clear communication strategy for purpose of education, information sharing and dissemination so that decision making process at a national, regional and local level can rely on reliable and up-to –date information. Ministry of Water and Irrigation (MWI) together with two sub-sectors- Water Resource Management (WRM) and Water Supply Services (WSS) have in place the necessary policies and strategies as defined in the National Water Resources Management Strategy (NWRMS). Good provision of services of water supply and sanitation is however not just about policies and legal frameworks nor is it about physical infrastructures; it includes the local capacity to innovate and make appropriate choices with regard to new technology and the institutional forms for building and managing water projects.

## **1.2 Statement of Problem**

Project being an engine of change requires detailed analysis during planning stage to ensure success in its compatibility and relative advantage to its new form and process. According to the World Bank (2005) Review, 80% of unsuccessful projects have failed due to poor objectives or misleading or weak analysis of assumptions not because of poor implementations. These critical assumptions are factors outside project control but they greatly affect the success or failure of project. These risk factors also need to be clearly identified by the project team and other stake holders. Furthermore they should be integrated into project design for such actions like estimation, reduction or mitigation of their effects. The most common factors include natural, organizational (institutional) and social issues.

According to Standish Report, (1994), 16.2% of global projects succeed, 52.7% faced with challenges with partial failure while 31.1% fail. It was noted that lack of users involvement or incomplete requirements and specifications were the top indicators found in challenged and failed projects. The report shows that the major causes of project failure are lack of stakeholders buying-in the project, hidden agenda or unmanaged expectations of stakeholders. The report contents that the most critical issues of the success of project is how to manage people (stakeholders) through effective communication. It is worthy to note that the human social elements emanate very strongly as greatest contribution to project failure. This would be caused by either weak or misleading analysis of assumptions of social factors at all levels of project cycle. Regrettably, in Kenya most failures of water projects are greatly caused by human social elements. This is profound in non involvement of users and unmanaged expectation of all stakeholders. Some of the critical social issues that affect the success of most projects includes; accessibility, participation, sustainability, and motivation factor.

## **1.3 Purpose of the Study**

The purpose of this study was to investigate the social factors influencing the performance of water projects of Gatamathi Water and Sanitation Company.

#### **1.4 Research Objectives**

- (i) To examine the relationship between accessibility of water and performance of water projects in Gatamathi Water and Sanitation Company.
- (ii) To assess the influence of participation of local communities on performance of water projects in Gatamathi Water and Sanitation Company.
- (iii) To examine the relationship between sustainability and performance of water projects of Gatamathi Water and Sanitation Company.
- (iv) To find out the relationship between motivation and performance of water projects of Gatamathi Water and Sanitation Company.

#### **1.5 Research Questions**

- (i) What is the relationship between accessibility of water and performance of water projects in Gatamathi Water and Sanitation Company?
- (ii) How does the local community participation influence the performance of water projects in Gatamathi Water and Sanitation Company?
- (iii) In which way does the sustainability relate to the performance of water projects of Gatamathi Water and Sanitation Company?
- (iv) To what extent does the motivation relate with the performance of water projects of Gatamathi Water and Sanitation Company?

#### **1.6 Significance of the Study**

The significance of this research was to assist in identifying the social factors influencing the performance of water projects. It is therefore hopeful that the results of this study will help the management of water projects both locally and nationally.

#### **1.7 Limitations of the Study**

Time to conduct the study was limited. It was also expensive to use a variety of data collection tools. The researcher therefore used questionnaires solely for data collection since their administration is faster and less costly.

#### **1.8 Delimitation of the Study**

The study was limited to the performance of water projects in regard to the social factors in Murang'a County. The study targeted both employees and consumers of Gatamathi Water and Sanitation Company in the year 2012.

## 1.9 Basic Assumptions

The following were the major assumptions taken by the researcher:-

- (i) The respondents provided truthful and honest responses to the items in the questionnaires.
- (ii) The respondents were knowledgeable and provided accurate and useful responses.
- (iii) The independent variables (accessibility, community participation, sustainability and motivation) identified do have some influence on the performance of water projects.

## 1.10 Definition of significant terms

**Project** - is a temporary endeavor with a defined beginning and end (usually time-constrained, and often constrained by funding or deliverables), undertaken to meet unique goals and objectives, typically to bring about beneficial change or added value.

**Project management**- is the discipline of planning, organizing, securing, and managing resources to achieve specific goals.

**The “virtual water”**- contained in the products is a significant concept, especially for water-scarce regions, in which is important to adapt the production systems to products less intensive in water. The importance of virtual water lies with its potential to balance water-rich and water-poor regions, at national and global levels, through the regional and international trade in agricultural products.

**High performance**- in an organization is described by multiple perspectives such as cost controls, financial reporting, value creation, information access, employee productivity, customer satisfaction and long term strategic partnerships (excellent in comparison to the set targets) high levels of performance, profitability and customer satisfaction is associated with enhancing skills and engaging the enthusiasm of employees.

**Performance**- It is both behaviors and results. Behaviors emanate from the performer and transform performance from abstraction to action.

**Accessibility**- is the social aspect of water service provision that is most clearly and closely linked to pricing policies.



**Participatory**-is an inclusion of stakeholders aiming full potential through motivation, active involvement and organization at the grassroots level of rural people.

**Sustainability**-sustainability of water resources deals with the capacity to manage population growth to achieve stability in water demand.

**Motivation** - Intrinsic motivation refers to motivation that is driven by an interest or enjoyment in the task itself, and exists within the individual rather than relying on any external pressure.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

The review embarked on the social factors that contribute to the performance of water projects. The review assisted the researcher in providing him with current necessary information addressing the research gap. Moreover literature review gave the researcher an insight of the gap by providing him with current data and status of performance level of Water Projects in the line with social factors. Social aspect was a cardinal and integral element over other elements i.e. economic, political and environmental factors on the performance of projects especially Water Projects. Finally, the chapter presents a theoretical perspective and a Conceptual Framework.

#### **2.2 Water Project Performance**

According to ADB study (2000), water is a social good, all dimensions of water resources management should be analyzed adequately from the social perspective, with a view to elucidating social issues which are critical to achieving integrated water resources management as well as maximizing social benefits and mitigating detrimental social impacts. The need for establishing adequate networks for water resources assessment, monitoring water quality, and addressing social and cultural issues associated with sustainable management of water resources is a challenge facing most African countries. Social analysis and identification of critical social issues at the onset of projects will enable the incorporation of appropriate responses for mitigating negative impacts. Thus it is necessary to undertake social impact assessment in integrated water resources management projects. However, methodologies to be applied need to be determined on a project by project basis. The following indicate the strategies corresponding to different social issues in relation to integrated water resources management.

Fresh water resources are scarce and finite. The social aspect of sustainability of water resources deals with the capacity to manage population growth to achieve stability in

water demand. In most RMCs, the key strategies used are to lower population growth rates, and ensure balanced spatial distribution of the populations.

Successful implementation of these strategies entails awareness raising, sensitization, education and training programs, and the use of incentives. In the urban areas, there is a need for municipal administrators and planners to give due recognition to informal settlements and slums in peri-urban areas, and find practical solutions to the challenge of providing people, especially the poor, with basic adequate amenities, including water supply and sanitation facilities. Their willingness to pay for such services is often higher than is usually assumed as indicated by the high prices paid for water from vendors. RMCs should also make a long term commitment to developing rural and marginal areas by creating the enabling environment for the creation of jobs, and the development of alternative resources such as fisheries, and fish farming to reduce current rapid urbanization. A comprehensive analysis of the linkages of water resources and human settlement also calls for an examination of the system of land ownership and land use patterns in rural and urban areas, respectively.

Education aimed at creating awareness and a positive change of attitude among the population on the hygienic use and sustainable management of water resources is a key element to health improvement. Health and education programs targeted at improving the operation of domestic water facilities, hygiene in the home, and the proper storage and use of water supplies should be encouraged. The preventive and control measures of water related disease such as malaria and schistosomiasis should be taken as integral parts of water resources management practices based on health impact assessment (HIA) of projects. Such programs need to be flexible, participatory, and sensitive to complex social and cultural norms and perceptions. For the meaningful involvement of the public, public information sessions, mass-campaign and motivation are most essential.

On gender, gender equity implies the effective participation of women in the planning, design, implementation, evaluation, and all other decision-making processes in water resources development and management. The role of women as custodians of food and water related issues at household level should be fully taken into account.

Women are particularly concerned about family and community issues. They may therefore be better contributors to the establishment and maintenance of project

facilities. Experience has shown that women are sometimes better financial managers of water projects. They may also have preferences for different services that could enable them to engage in higher economic value activities. The Bank will therefore support water resources projects and policies that: give due recognition to the role of women, alongside men, as custodians of domestic water consumption and, as agricultural and food producers, who have interests in irrigation; improve women's access to and control over production factors, services and infrastructure facilities; reduce the domestic workload of women; create opportunities for women to improve their knowledge and capacities; seek women's active participation in decision-making at domestic, local, national and international levels; and strengthen women's organizations.

On Participation, a demand-responsive approach is key to the successful development of water resources. In contrast to centralized, top-down approaches that were generally favored in the past, the demand-responsive approach is participatory and involves beneficiaries at every stage. This process has the advantage that users' preferences for different levels of services, and their willingness and ability to pay can be taken into account in the project design. Experience has shown that projects and programmes that are built on a demand-responsive approach tend to be more successful and have better prospects for sustainability than those, which are supply-driven.

A study conducted under the UNDP-World Bank Water and Sanitation Program (2000) provides the following useful recommendations for making rural water supply sustainable; adopting a demand-responsive approach will improve the sustainability of water systems. The study provides evidence that better results are achieved when preferences for service levels, technology and siting are obtained directly from well-informed households, rather than from traditional leaders or water committees.

Training for household members and for water committees improves sustainability by building capacity and commitment; it should include the provision of knowledge on how to operate and maintain systems, as well as about the potential health benefits of an improved supply. It was found that the latter affects the way households value the service and thereby their willingness to sustain the system.

Designated and accountable community organizations are necessary components of success; giving clear responsibilities for management, operations, maintenance and fee collection to community organizations increases the sustainability of projects. Such organizations should be transparent, accountable, and trusted by community members.

According to ADB Bank (2000), other social issues like, Cultural and traditional values of people in relation to water resources should be studied to provide a basis for designing effective information, communication and education programme to deepen community understanding of sustainable utilization and management of water resources. As stakeholders, modern civil organizations such as consumer associations, cooperatives and professional associations should be taken on board, supported and empowered to enable them to participate significantly in water resources management. As a social good, there is a universal right to water and it should be made available to all at an affordable cost. Gender issues should be taken into account in integrated water resources management. The Bank will strongly support, water resources development projects which show good prospects of reducing the time spent by women and girls in fetching and storing water. The Bank will bring up issues on Core Labour Standards in the process of discussions with RMCs, and appraise programmes and projects in the water sector to ensure that they are in conformity with established criteria on labour. Where involved, the Bank will ensure that stakeholders are effective participants in all decision-making process likely to affect them. Their willingness and capacity to pay for water resources development should be sought and not just assumed.

The Bank will ensure that control and prevention measures of water related disease are integrated as part of the water management practices control and prevention measures based on proper health impact assessment and through effective stakeholder participation.

### **2.3.1 Performance theory**

According to Armstrong (2006) performance is a matter not only what people achieve but how they achieve it. The Oxford English Dictionary confirms this by including the phrase “carrying out” in its definition of performance “The accomplishment execution, ordered or undertaken”. Brumbrach (1988) described performance as both

behaviors and results. Behaviors emanate from the performer and transform performance from abstraction to action. Not just the instruments for results, behaviors are also outcomes in their own right – the product of mental and physical effort applied to tasks and can be judged apart from results. Armstrong supported Brumbrach by stating that performance leads to the conclusion that when managing performance both inputs (behavior) and outputs (results) need to be considered. It is not a question of simply considering the achievement of targets as used to happen in management by objectives schemes. Competency factors need to be included in the process. This is the so-called mixed model of performance management which covers the achievement of expected levels of competence as well as objective setting and review.

In understanding performance management one need to consider issues which includes meaning of performance, significance of values (converting rhetoric to reality), alignment of shared vision and mutual expectations, managing expectations (shares understanding and significance of discretionary behavior; reinforce positive attitudes i.e. effective or productive behavior, care, innovation and amount of effort Purcell and his team, (2003). High performing organization aims at maximizing commerce. High performing organization focuses in using learning as a tool of perfecting the achievement of the firm's business intent.

Nunno, (2005) argues that high performance in an organization is described by multiple perspectives such as cost controls, financial reporting, value creation, information access, employee productivity, customer satisfaction and long term strategic partnerships (excellent in comparison to the set targets) high levels of performance, profitability and customer satisfaction is associated with enhancing skills and engaging the enthusiasm of employees.

Vitalo, (2004) state that high performing organization is characterized by consistently displaying the ability to sustain high performance. High performance is sustained over time and also over the changing market circumstances.

Haag et al, (2008) concluded that to survive and thrive, an organization must create a competitive advantage. Competitive advantage is a product or service that an organizations customers value more highly than similar offerings from a competitor.

An organization gain competitive advantage by gaining a first-mover advantage and pay close to their competition through environmental scanning. There are three common tools used in industry to analyze and develop competitive advantages namely; the five forces model by Michael Porter (buyer power, supplier power, threat of substitute product/services, threat of new entrants and rivalry among existing competitors), the three generic strategies (cost leadership, differentiation and focused strategy). And lastly, value chains, business processes, chain or series should create or add unique value to the product/service at every stage for the customer.

Armstrong nevertheless, added that high performing organization works towards having a balanced presentation of both financial and operational measures –“the balanced score card”. The balanced score card states that performance is a functional of ability, motivation and opportunity. The model implies that the performance of individual employees contributes immensely towards the organization’s performance.

## **2.4 Social Factors**

Social factors have a cause-and-effect relationship with water resources management. While the development and management of water resources exert impacts on social factors, social issues also affect the development of water resources and its management.

### **2.4.1 Accessibility**

According to Herrington (2002), “Accessibility” is the social aspect of water service provision that is most clearly and closely linked to pricing policies. Affordability of water services may not be distributed equally across income groups or neighborhoods - a lower income household will inevitably pay a higher proportion of their income for water services than a higher income household does.

Many Organizations for Economic Corporation Development (OECD) countries have seen a real increase in household water charges in recent years. The factors behind this trend include continuing pollution of water sources (necessitating more expensive treatment), combined with additional national legislation and European Union (EU) directives that require higher standards of wastewater treatment. This trend toward higher prices is likely to continue, and will therefore continue to generate pressure on the perceived affordability of water services.

There are several methods available for measuring the affordability of water charges. "Macro-affordability" indicators are developed by relating national average household water charges to either average household income (disposable or gross) or average household aggregate expenditure. "Micro-affordability" indicators disaggregate the former by income groups, family types or regions. Available evidence of affordability indicators suggests that, in about half the OECD countries (15 out of 30), affordability of water charges for low-income households is either a significant issue now or might become one in the future, if appropriate policy measures are not put in place. The trade-offs between efficiency and equity objectives in the provision of household water services typically occur when moving from an unmeasured to metered charging structure, when rebalancing tariffs away from fixed charges towards volumetric charges, and when increasing fees and tariffs towards full-cost pricing. There is considerable experience in OECD countries with policy measures to address water affordability for vulnerable groups, while attempting to make water pricing reveal the full economic and environmental costs of water services. Affordability measures can be classified in two main groups: income support measures and tariff-related measures. The income support measures address the individual customer's ability to pay from the income side (through income assistance, water services vouchers, tariff rebates and discounts, bill re-phasing and easier payment plans, arrears forgiveness).

Tariff-related measures keep the size of water bills low for certain groups (e.g. refinement of increasing-block tariffs, tariff choice, tariff capping). There seems to be clear potential benefits from increasing block tariff structure, which adjusts a free or very low-priced first block by household size, and then reflects the transition from "basic" to "discretionary" water use in subsequent blocks at prices closer to marginal social costs. There is evidence that the use of such tariffs is increasing. While the provision of urban water supply and sanitation is traditionally considered a public service, there is a trend of increasing commercialization and Private Sector Participation (PSP), for a number of reasons. Whether water services are provided by the public or private sector (or both), it is important that social and environmental objectives continue to be met. Different types and degrees of PSP in household water services are found in OECD countries. These can be characterized as Administrative PSP, Corporative PSP, Legal PSP and Financial PSP, according to legal status, asset



ownership, operation and management, and capital investment responsibility. Several examples of different forms of PSP are included in this book. These examples illustrate how these water service providers are being regulated in the areas of pricing, service standards, operational efficiency, investment practices, water quality, environmental protection, and consumer protection. Some key criteria for evaluating the effectiveness of water service providers in meeting economic, social, and environmental objectives are also considered.

#### **2.4.2 Participatory of Local Communities**

According to Burkey S. (2000) participation by the people in the institutions and systems which govern their lives is a basic human right and also essential for realignment of political power in favour of disadvantaged groups and for social and economic development. Rural development strategies can realize their full potential only through motivation, active involvement and organization at the grassroots level of rural people. Participation is an essential part of human growth, that is the development of self confidence, pride initiative, creativity, responsibility, co-operation without such a development within the people themselves all efforts to alleviate their poverty will be immensely more difficult, if not impossible. This process whereby people learn to take charge of their own lives and solve their own problem is the essence of development.

According to African Development Bank (2000) in contrast with their role as primary caretakers in the welfare of their societies, the role of African women in decision-making processes in the development and management of water resources has most often been neglected. In general, women have largely been excluded from institutional structures responsible for, or involved in, the planning and implementation of water-sector projects. Thus, in the past projects have been formulated and implemented without taking into account the preferences and capacities of women. Furthermore, women also suffer from discriminatory land tenure systems and inadequate access to credit which place them at a distinct disadvantage when it comes to allocation of resources for socio-economic activities. Policies to equip and empower women to participate at all levels in water resources management programmes are rare.

Gender discrimination in employment and child labour are also problems in some countries. In water resources management, some of the potential issues include the rights of workers involved in construction, the potentials of water sector projects in

freeing young children to go to school, the relationship between water availability and health/environment of workers. Equity implies the effective participation of women in the planning, design, implementation, evaluation, and all other decision-making processes in water resources development and management. The role of women as custodians of food and water related issues at household level should be fully taken into account. Women are particularly concerned about family and community issues. They may therefore be better contributors to the establishment and maintenance of project facilities. Experience has shown that women are sometimes better financial managers of water projects. They may also have preferences for different services that could enable them to engage in higher economic value activities.

The water resources projects and policies should; give due recognition to the role of women, alongside men, as custodians of domestic water consumption and, as agricultural and food producers, who have interests in irrigation; improve women's access to and control over production factors, services and infrastructure facilities; reduce the domestic workload of women; create opportunities for women to improve their knowledge and capacities; seek women's active participation in decision-making at domestic, local, national and international levels; and Strengthen women's organizations A demand-responsive approach is key to the successful development of water resources. In contrast to centralized, top-down approaches that were generally favored in the past, the demand-responsive approach is participatory and involves beneficiaries at every stage. This process has the advantage that users' preferences for different levels of services, and their willingness and ability to pay can be taken into account in the project design. Experience has shown that projects and programmes that are built on a demand-responsive approach tend to be more successful and have better prospects for sustainability than those, which are supply-driven, (ADB, 2000).

#### **2.4.3 Sustainability of Water Projects**

According to African Development Bank, fresh water resources are scarce and finite. The social aspect of sustainability of water resources deals with the capacity to manage population growth to achieve stability in water demand. The key strategy encouraged includes the lowering population growth rates, and ensure balanced spatial distribution of the populations. Moreover, successful implementation of these strategies entails awareness raising, sensitization, education and training programs, and the use of incentives. A comprehensive analysis of the linkages of water resources and human settlement also calls for an examination of the system of land ownership

and land use patterns in rural and urban areas, respectively. Education aimed at creating awareness and a positive change of attitude among the population on the hygienic use and sustainable management of water resources is a key element to health improvement. Health and education programs targeted at improving the operation of domestic water facilities, hygiene in the home, and the proper storage and use of water supplies should be encouraged.

Culture and tradition affect the behavior of people towards water as a social and economic good. Certain aspects of cultures and traditions may be incompatible with rational allocation and use of water resources or the preservation of water quality. In the rural areas high population growth has contributed to land degradation arising from increased demand for agricultural land and energy supply. On the other hand poor soil conditions, lack of water for crop production and overcrowding on limited productive areas has contributed to low food availability and general poverty in the rural areas. The use and management of water has a direct influence on the health situation of the population and, therefore, on the development of human capital. Health is adversely affected by contaminated drinking and bathing water, raw wastewater, solid waste, air pollution, low level of nutrition and inadequate energy supply. As water is a social good, all dimensions of water resources management should be analyzed adequately from the social perspective, with a view to elucidating social issues which are critical to achieving integrated water resources management as well as maximizing social benefits and mitigating detrimental social impacts. The need for establishing adequate networks for water resources assessment, monitoring water quality, and addressing social and cultural issues associated with sustainable management of water resources is a challenge facing most African countries. Social analysis and identification of critical social issues at the onset of projects will enable the incorporation of appropriate responses for mitigating negative impacts. Thus it is necessary to undertake social impact assessment in integrated water resources management projects. However, methodologies to be applied need to be determined on a project by project basis. The following indicate the strategies corresponding to different social issues in relation to integrated water resources management. (ADB, 2000).

#### **2.4.4 Motivation**

Intrinsic motivation has been studied by social and educational psychologists since the early 1970s. Research has found that it is usually associated with high educational achievement and enjoyment by students' evaluation theory. Students are likely to be intrinsically motivated if they:

Attribute their educational results to internal factors that they can control (e.g. the amount of effort they put in), Believe they can be effective agents in reaching desired goals (i.e. the results are not determined by luck), are interested in mastering a topic, rather than just rote-learning to achieve good grades.

Extrinsic motivation comes from outside of the individual. Common extrinsic motivations are rewards like money and grades, coercion and threat of punishment. Competition is in general extrinsic because it encourages the performer to win and beat others, not to enjoy the intrinsic rewards of the activity. A crowd cheering on the individual and trophies are also extrinsic incentives.

Social psychological research has indicated that extrinsic rewards can lead to over justification and a subsequent reduction in intrinsic motivation. In one study demonstrating this effect, children who expected to be (and were) rewarded with a ribbon and a gold star for drawing pictures spent less time playing with the drawing materials in subsequent observations than children who were assigned to an unexpected reward condition and to children who received no extrinsic reward. Self-determination theory proposes that extrinsic motivation can be internalized by the individual if the task fits with their values and beliefs and therefore helps to fulfill their basic psychological needs. (Wikipedia, 2012)

#### **2.5 Conceptual Framework**

The following section presents the conceptual framework on which the study is based. The level of water projects performance is greatly influenced by social factors which include accessibility, sustainability, community participation and motivation.

Accessibility of water is determined by the water supply/discharge, water demand, and water charges modalities.

Participatory of local community is determined by their initiatives, creativities responsibilities, and co-operation with the water projects management.

Sustainability of water projects is contributed by skills and knowledge of the community, resource supply of water, maintenance cost and consumer's demand on water.

Motivation of stakeholders is contributed by incentives, royalty, confident level and corporate social responsibility

Other extraneous factors i.e. Moderating and intervening variables include personal characteristics and government policies which have been put into control by the researcher.

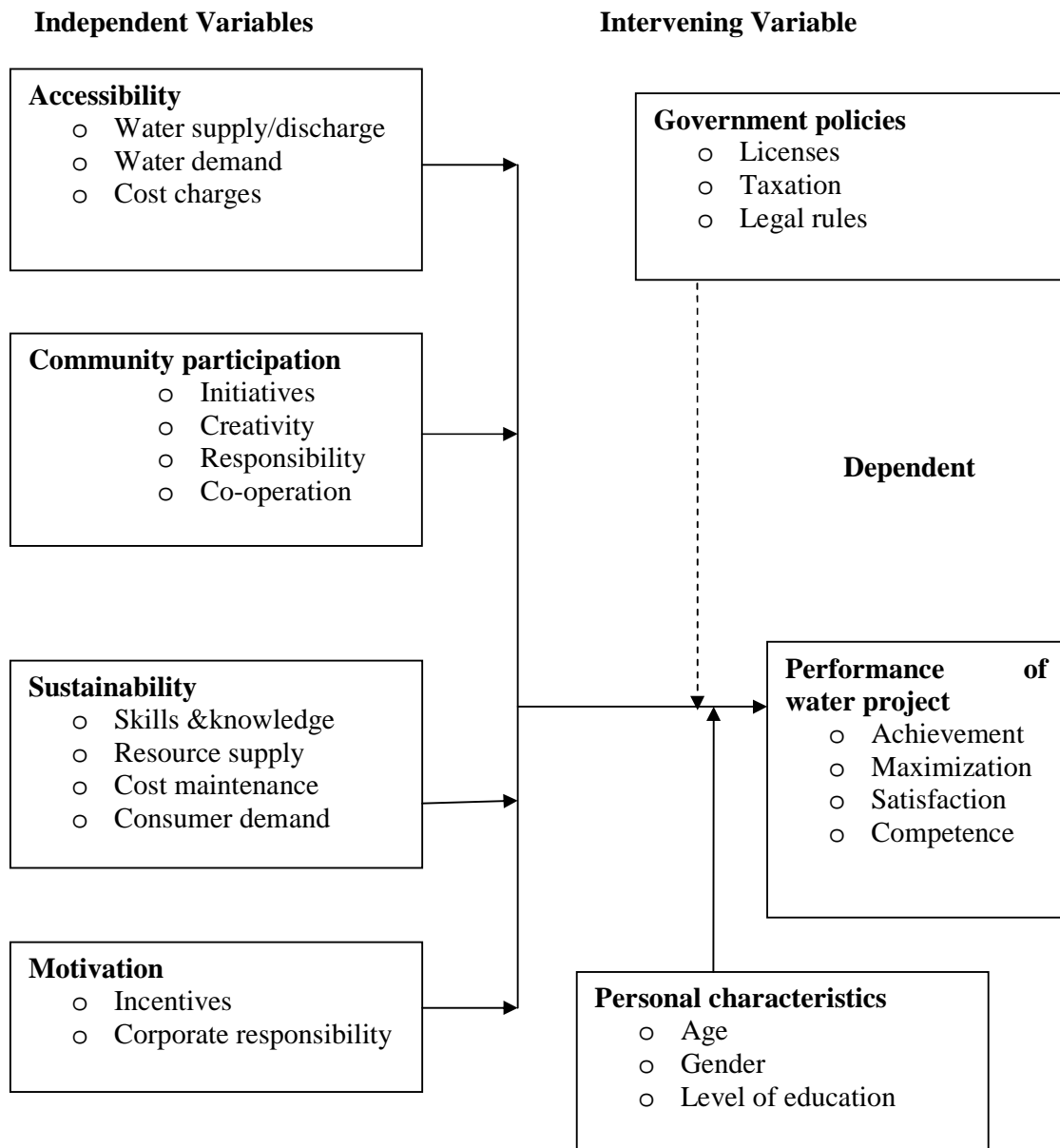


Figure 1: Conceptual Framework

Moderating variable

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

This chapter outlined how the study was carried out. The chapter focuses on scientific approach that was employed by the researcher in conducting the study. The chapter contains research design, target population, the sample and sampling procedures, research instruments, validity and reliability of instruments, data collection and data analysis procedures.

#### **3.2 Research Design**

According to Orodho (2003) research design is a scheme, outline or plan that is used to generate answers to research problems. The researcher used cross sectional ex post-facto survey design in which he studied events as they have occurred in the field without manipulating them. It constitutes the blueprint for the collection, measurement and analysis of data (Kothari, 2003). The researcher used case study design. This design investigated the social factors on the performance of water project. The research design helped to establish the degree of relationship existing between two or more variables. Several samples of categories of employees were studied by collecting and analyzing sample data from the entire population.

The case study design involves intensive investigation and analysis of a single instance of a phenomenon, structure or organization being studied. The researcher adopted a single case design. According to Yin (2003) single case study was an analogous to a single experiment and many of the same conditions that justifies a single experiment. Single case study was an appropriate design under several circumstances. This design therefore helped to investigate the social factors on the performance of water project. An intensive study was done gearing towards a thorough understanding of factors of limited to generalizability. In the study only few units were involved and not generalized population. The study was causal study which intended to establish causal effects of the performance of water project. The researcher used several theories for external validity. There was pattern-matching, explanation building and addressing of rival explanations during data analysis for internal validity.

The study adopted both qualitative and quantitative research approach which involved collection of numerical data. The researcher used triangulation (mixing the methodology) to strengthen the study design by combining several methodologies. Data triangulation was also used in collecting primary and secondary data sources. Theory triangulation is upright to explain, understand, describe, interpret and predict phenomena. The use of multiple methods in sampling techniques, instruments and statistical analysis were utilized in order to enhance the study. The process of comparison focuses on the relation between the project performance (Y) as dependent variable and the social factors (X) as independent variables.

### **3.3 The Target Population**

The target population of this study was made of Top Management, Middle level Managers, Supervisors and other workers plus the consumers of Gatamathi which indicates that there are 240 employees and consumers whom the company involved in its operations. It is from this population list the researcher sampled the target population. Researcher got a representative sample from various categories of employees and consumers.

### **3.4 Sample size and Sampling Procedure**

According to Mugenda, (2003) a sample is a subject of particular population. Sample selection was fundamental activity in a case study. Sampling is the procedure a research uses to gather people, places or things to study (Orodho and Kombo, 2006). The chosen population of study was made of 240 employees and consumers of Gatamathi.

The population constituted Top Managers/Directors, Middle Level Managers, Supervisors, workers and consumers. The researcher chose a sample population of 80 employees and consumers for study. The sample population arrived through sampling method. Probability sampling techniques will be used in order to get every member of the population equal chances of being included in the study. The technique enabled the researcher to generalize to the larger population and make inferences. The researcher chose Gatamathi Water Company because of its uniqueness and critical role it plays in enhancement of the county's economy.

The population was divided into homogenous sub-groups (strata) i.e. Directors, Executive, Supervisors, Workers and Consumers. This was arrived through stratified sampling method where 30 percent of every sub group was chosen through random sampling. According to Cochran (1997) a sample of 30 % of population is sufficient for a study. The stratified sampling method was appropriate as all existing subgroups represented and preferred to be easy applied for large population.

	Type of Employees/consumers	T. Population	Sample 30% rate	Sample size
1.	Directors	9	30%	3
2.	Executive	36	”	12
3.	Supervisors	39	”	13
4.	Consumers	90	”	30
5.	Workers	66	”	22
	<b>Total</b>	<b>240</b>		<b>80</b>

**Table 3.4 Source: Research data 2012**

### **3.5 Research Instruments**

Various instruments for triangulation purposes were applied in order to ensure the validity of data. The type of data which was collected comprises both primary and secondary data. The researcher employed questionnaires, (schedule response items), structured interviews and document analysis.

The necessary instrument was developed to obtain views of respondents as wide and in-depth as possible on the topic. The instruments were prepared according to five themes: the project performance, accessibility, affordability, sustainability and motivation.

The instruments were formulated to ensure clarity, validity and reliability to the purpose of the study. The questions were selected and ordered in a practical way to solicit valid and reliable responses from respondents. The researcher used close-ended questionnaires for easier analyses of data. 80 questionnaires were administered to the



respondents. Interview guides was also used to gather information from key personnel.

### **3.5.1 Pilot Study**

The questionnaires were applied in a selected sample of 30 employees and consumers of Gatamathi Water Company but outside the sampled population. According to Kombo & Tromp, (2006) a pre-test is a pilot study that helps to test the feasibility of the study techniques and to perfect the questionnaires concepts and wording. A pre-test was used to help researcher to discover potential misunderstandings, errors or biasing effects. The necessary adjustment was done before administering final instruments.

### **3.5.2 Instrument Validity**

According to Kombo, (2006) validity measures of how well an instrument measures what it is supposed to measure. For the research instrument to be valid i.e. to fulfill the function intended to measure, the researcher carried pre-test of the questionnaire in a pilot study.

This process was repeated severally until sufficient questions were generated to enquire all intended issues. For construct validity, the researcher used multiple sources of evidence; establish chain of evidence and key informants to review draft of case study report. Internal validity for this causal study was provided by determining relationship between independent variables (X) social factors and dependent variable (Y) the rate of performance of Gatamathi Water Project. External validity was realized by establishing the domain to which a study's finding can be generalized.

### **3.5.3 Instrument Reliability**

Reliability measure how consistent the results from instruments were.

According to Kombo and Tromp, (2006) gives an illustration of reliability that if one administer an instrument to a subject twice do you get the same score on the second administration as you did on the first? Mugenda, (2003) added that reliability is whether a measure for instrument yield consistent results or data after repeated trials.

According to Yin, (2003) case study relies on analytical generalization where an investigator is striving to generalize a particular set of results to some broader theory unlike survey research where the investigator relies on statistical generalization. The

reliability means the chances of getting the same results if followed the same procedures to conduct the same case study all over again. Yin, (2003) the goal of reliability is to minimize the errors and biases in a study. The researcher therefore administered pilot study, made as many steps as operational as possible and adhere to research guidelines during data collection, data analysis or composition phases.

### **3.6 Data Collection Procedure**

Questionnaires and cover letter were administered to the selected sample population. Questionnaires were hand dropped and picked up at agreed time. Structured in-depth interview was prepared. Several contacts were made with relevant personnel's i.e. administration and management of Gatamathi Water and Sanitation Company.

Booking of meetings were done and follow-ups (Physical and telephone). The researcher conducted interviews at appropriate time with respondents. The intension of the study was made clear to respondent. The researcher also ensured confidentiality of information collected and conforms to the pledges made at the beginning. Appropriate techniques were applied to control statistical disclosure in the field. The researcher ensured punctuality in appointments, friendliness, clear and simple language, utilized various ways of probing, and acknowledged certain psychological factors to induce correct responses.

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

Quantitative data from the questionnaires were coded and analyzed. After collecting the data the researcher pre-processed it to eliminate unwanted and unusable data which would interfere with the analyses. The data collected was analyzed using descriptive statistics in form of tables, and frequency tables. The frequency was then converted into percentages for interpretations. Pearson correlation of variables was used through a SPSS computer package in determining the relationship between independent and dependent variables. Level of confidence of 95% was assumed and margin error of 0.5 on both half.

Presentation of data was in form of tables, bar graphs, pie charts, and frequency tables. The qualitative data was grouped into related themes and synthesized into meaningful information. The analysis of data was then presented in both statistical and graphical techniques.

### **3.8 Ethical considerations**

Permission to become a participant in this study was sought before administering the questionnaire to selected respondent. Questionnaires were answered freely and individually hence confidentiality was ensured. Participants were given the assurance that their identity remained anonymous in order to uphold their privacy. A letter from the researcher to the respondent supported this undertaking.

### **3.9 Summary**

This chapter highlights that the study adopted quantitative approach with descriptive and numerical data to establish the social factors influencing the performance of Gatamathi water and Sanitation Company. This includes research design, the target population, sample size and sampling procedure, research instruments, data collection, data analysis and presentation. Questionnaires were used as the instruments of data collection and they were pre-tested for validity and reliability.

**CHAPTER FOUR**  
**DATA ANALYSIS, PRESENTATION**  
**AND INTERPRETATION OF THE FINDINGS**

**4.1 Introduction**

This chapter gives the outcome of the study. The results were presented quantitatively with descriptive and numerical data. Analysis of data involved editing, coding and tabulation process. The analyzed data were presented in form of tables through descriptive statistics.

**4.2 Response Rate**

In the study there were 80 respondents out of which 78 questionnaires were analyzed. The study therefore was based on 78 respondents out of 80 targeted samples. The two questionnaires were returned but incomplete. This translates to 97.5 % response rate which is a high response rate. The discussion was also based on research objectives and questions and the analyses of data were done through SPSS.

**4.3 Background Information of the Respondents**

**Table 4.1 Gender**

<b>Gender</b>	<b>Frequency</b>	<b>Percentage</b>
Male	36	46
Female	42	54
<b>TOTAL</b>	<b>78</b>	<b>100</b>

Table 4.1 shows that 46% of the respondents of Gatamathi Water Company were male and 54% are female. This indicates that in Gatamathi Water Company is close to gender parity though women representation was more.

**Table 4.2 Level of Education**

<b>Level Of Education</b>	<b>Frequency</b>	<b>Percentage</b>
No formal education	15	19
Primary education	22	28
Secondary education	30	39
Post secondary education	11	14
<b>TOTAL</b>	<b>78</b>	<b>100</b>

Table 4.2 shows that 19% of the respondents have no formal education, 28% primary education 39% secondary education and 14% post secondary education. This shows majority of Gatamathi Water company had low education level with very few having attained post secondary education.

**Table 4.3 Ages of Respondents**

<b>Age Bracket</b>	<b>Frequency</b>	<b>Percentage</b>
18-25	14	18
26-35	20	26
36-45	16	20
46-55	18	23
56 and above	10	13
<b>TOTAL</b>	<b>78</b>	<b>100</b>

Table 4.3 shows that 18% of the stakeholders of Gatamathi water company are of age between 18 and 25 years, 26% are aged between 26 and 35 years, 20% were between 36-45 years, 23% were between 46-55 years and 13% were 56 and above years old. This indicates that, the age of Gatamathi Water company stakeholders was evenly distributed from 18 years to 56 years and very few over 56 years old.

**Table 4.4 Distribution of Stakeholder**

<b>Position</b>	<b>Frequency</b>	<b>Percentage</b>
Director	3	4
Executive manager	12	15
Supervisor	13	17
Workers	21	27
Client	29	37
<b>TOTAL</b>	<b>78</b>	<b>100</b>

Table 4.4 shows that 4% of the respondents of Gatamathi water project were Directors, 15% executive manager, 17% were supervisors, 27% were subordinates and 37% clients or customers.

#### **4.4 Performance of Gatamathi Water**

**Table 4.5 Performance of Gatamathi Water Project**

<b>Rate Of Performance</b>	<b>Frequency</b>	<b>Percentage</b>
Very good	8	10
Good	18	23
Average	24	31
Poor	17	22
Very poor	11	14
<b>TOTAL</b>	<b>78</b>	<b>100</b>

Table 4.5 shows that 10% of the stakeholders rate the performance of Gatamathi water project as very good , 23% as good, 31% as average, 22% as poor and 14% as very poor. This means majority of Gatamathi water stakeholders rate its performance as average.

**Table 4.6 Income of Stakeholders**

<b>Income Category Of Respondents</b>	<b>Frequency</b>	<b>Percentage</b>
Below 1,000	13	17
1,001-3,000	24	31
3,001-5,000	20	25
5,001-10,000	18	23
Above 10,000	3	4
<b>TOTAL</b>	<b>78</b>	<b>100</b>

Table 4.6 shows that 17% respondents' income was below Ksh.1,000, 31% earn between Ksh.1001-3,000, 25% earn from Ksh. 3001-5,000, 23% earn between Ksh.5,001-10,000 and 4% above Ksh.10,000. This indicates that majority of the Gatamithi Water stakeholders income is low.

#### **4. 5 Accessibility**

**Table 4.7 Adequacy of Water**

<b>Companies Water Discharge Is Not Adequate</b>	<b>Frequency</b>	<b>Percentage</b>
Strongly disagree	0	0
Disagree	8	10
Neutral	15	19
Agree	34	43
Strongly agree	21	27
<b>TOTAL</b>	<b>78</b>	<b>100</b>

Table 4.7 shows that 10% of the respondents in Gatamathi Water Company disagree that companies water discharge is not adequate, 19% are neutral, 43% agree and 27% strongly agree. This indicates that Gatamithi Water Company does not provide adequate water to its clients.

**Table 4.8 Demand for Water**

<b>The Community Water Demand Is Inadequate</b>	<b>Frequency</b>	<b>Percentage</b>
Strongly disagree	14	18
Disagree	44	56
Neutral	17	22
Agree	3	4
Strongly agree	0	0
<b>TOTAL</b>	<b>78</b>	<b>100</b>

Table 4.8 shows that 18% of the respondents in Gatamathi Water Company strongly disagree that the community water demand is not adequate, 56% of them disagree, 22% are neutral and 4% agree. This indicates demand for water among the community is adequate.

**Table 4.9 Ability of the Community to Pay**

<b>Ability To Pay Water Services Is Not Satisfactory</b>	<b>Frequency</b>	<b>Percentage</b>
Strongly disagree	0	0
Disagree	22	28
Neutral	35	45
Agree	20	26
Strongly agree	1	1
<b>TOTAL</b>	<b>78</b>	<b>100</b>

Table 4.9 shows that 28% of the respondents of Gatamathi Water Company disagree that the ability to pay water services is not satisfactory, 45% did not know, 26% agree and 1% strongly agree that the community cannot pay for the water services. This indicates that, there are some elements of inability of the community to pay for water services.



**Table 4.10 Cost of Water**

<b>Cost Charges of Water Are Not Satisfactory</b>	<b>Frequency</b>	<b>Percentage</b>
Strongly disagree	0	0
Disagree	2	3
Neutral	9	12
Agree	62	79
Strongly agree	5	6
<b>TOTAL</b>	<b>78</b>	<b>100</b>

Table 4.10 shows that 3% of the respondents of Gatamathi water company disagree that the cost charges of water services are not satisfactory, 12% of them are neutral about it, 79% agree and 6% strongly disagree.

**Table 4.11 Accessibility of water of Gatamathi Water Company**

<b>Accessibility of Water</b>	<b>Frequency</b>	<b>Percentage</b>
Very high	0	0
High	16	21
Average	37	47
Low	21	27
Very Low	4	5
<b>TOTAL</b>	<b>78</b>	<b>100</b>

Table 4.11 shows that majority of the stakeholders felt that water accessibility is average in Gatamathi Water Company.

#### 4.6 Community Participation

**Table 4.12 Creativity level of Stakeholders**

<b>Creativity Level Of Stakeholder Is Satisfying</b>	<b>Frequency</b>	<b>Percentage</b>
Strongly disagree	10	13
Disagree	31	40
Neutral	30	38
Agree	7	9
Strongly agree	0	0
<b>TOTAL</b>	<b>78</b>	<b>100</b>

Table 4.12 shows that 13% of the respondents of Gatamathi Water Company strongly agree that the level of creativity of stakeholders is satisfying, 40% disagree, 38% are neutral and 9% agree.

**Table 4.13 Level of Responsibility**

<b>Stakeholder Level Of Responsibility To The Company Is Not Adequate</b>	<b>Frequency</b>	<b>Percentage</b>
Strongly disagree	0	0
Disagree	7	9
Neutral	38	49
Agree	28	36
Strongly agree	5	6
<b>TOTAL</b>	<b>78</b>	<b>100</b>

Table 4.13 shows that 9% of the respondents of Gatamathi Water Company disagree that stakeholders level of responsibility to the company is not adequate, 49% are neutral, 36% agree, while 6% strongly agree.

**Table 4. 14 Community Participation on Gatamathi Water company**

<b>Rate Of community Participation</b>	<b>Frequency</b>	<b>Percentage</b>
Very High	12	15
High	19	24
Average	24	31
Low	16	21
Very Low	8	10
<b>TOTAL</b>	<b>78</b>	<b>100</b>

Table 4.14 shows that the stakeholders were distributed from very high to very low in terms of influence of community participation on performance of Gatamathi water project.

#### **4.7 Sustainability**

**Table 4.15 Stakeholders Skills**

<b>The Company Has Not Adequately Equipped The Stakeholders With Relevant Skills And Knowledge</b>	<b>Frequency</b>	<b>Percentage</b>
Strongly disagree	0	0
Disagree	9	11
Neutral	17	22
Agree	42	54
Strongly agree	10	13
<b>TOTAL</b>	<b>78</b>	<b>100</b>

Table 4.15 shows that 11% of the respondents of Gatamathi water company disagree that the company has not adequately equipped the stakeholders with relevant skills and knowledge, 22% are neutral, 54% agree and 13% strongly agree. This indicates that Gatamathi Water Company has equipped majority of its stakeholders with relevant skills.

**Table 4.16 Management of Population Pressure**

<b>The Company Stakeholders Do Not Have The Capacity To Manage Ecological And Population Pressure On The Supply Of Water Resources</b>	<b>Frequency</b>	<b>Percentage</b>
Strongly disagree	0	0
Disagree	3	4
Neutral	16	20
Agree	50	64
Strongly agree	9	12
<b>TOTAL</b>	<b>78</b>	<b>100</b>

Table 4.16 shows that 4% of the respondents of Gatamathi water company disagree that the company stakeholders do not have the capacity to manage ecological and population pressure on the supply of water resources, 20% are neutral, 64% agree and 12% strongly agree.

**Table 4.17 Management of Operation Costs**

<b>Stakeholders Were Effectively Able To Manage The Company's Cost Of Operation</b>	<b>Frequency</b>	<b>Percentage</b>
Strongly disagree	11	14
Disagree	39	50
Neutral	9	12
Agree	19	24
Strongly agree	0	0
<b>TOTAL</b>	<b>78</b>	<b>100</b>

Table 4.17 shows that 14% of the respondents of Gatamathi Water Company strongly disagree that the stakeholders were effectively able to manage the company's cost of operations, 50% of them disagreed, 12% were neutral and 24% agreed. This indicates majority of the stakeholders felt that the company management cannot effectively manage the company's cost.

**Table 4.18 Stakeholders current and future needs**

<b>The Company Was Unable To Continuously Meet The Current And Future Needs Of Its Stakeholders</b>	<b>Frequency</b>	<b>Percentage</b>
Strongly disagree	0	0
Disagree	15	19
Neutral	17	23
Agree	41	52
Strongly agree	5	6
<b>TOTAL</b>	<b>78</b>	<b>100</b>

Table 4.18 shows that 19% of the respondents of Gatamathi Water Company disagree that the company is unable to continuously meet the current and future needs of its stakeholders, 23% are neutral, 52% agree and 6% strongly agree.

**Table 4. 19 Sustainability of Gatamathi Water Company**

<b>Rate Of Sustainability</b>	<b>Frequency</b>	<b>Percentage</b>
Very High	3	4
High	14	18
Average	33	42
Low	10	13
Very Low	18	23
<b>TOTAL</b>	<b>78</b>	<b>100</b>

Table 4.19 shows that the stakeholders were distributed from very high to very low in terms of sustainability on performance of Gatamathi water project.

#### 4.8 Motivation

**Table 4.20 Incentives**

<b>The Company Position Of Incentive Is Not Sufficient</b>	<b>Frequency</b>	<b>Percentage</b>
Strongly disagree	0	0
Disagree	16	21
Neutral	22	28
Agree	37	47
Strongly agree	3	4
<b>TOTAL</b>	<b>78</b>	<b>100</b>

Table 4.20 shows that 21% of the stakeholders of Gatamathi water company disagree that the company position of incentive is not sufficient, 28% neutral, 47% agree and 4% strongly agree. This indicates that, majority of the stakeholders felt that incentives provided by the company was sufficient.

**Table 4.21 Corporate Social Responsibility**

<b>The Company's Social Level To Corporate Responsibility Is Not Satisfactory</b>	<b>Frequency</b>	<b>Percentage</b>
Strongly disagree	0	0
Disagree	21	27
Neutral	33	42
Agree	22	28
Strongly agree	2	3
<b>TOTAL</b>	<b>78</b>	<b>100</b>

Table 4.21 shows that 27% of the respondents of Gatamathi water company disagree that the company's social level to corporate responsibility is not satisfactory, 42% are neutral, 28% agree and 3% strongly agree. This indicates that majority of stakeholders agreed that Gatamathi water company social corporate is not satisfactory.

**Table 4.22 Stakeholders Loyalty**

<b>The Stakeholder Loyalty To The Company Is Not Adequate</b>	<b>Frequency</b>	<b>Percentage</b>
Strongly disagree	2	3
Disagree	7	9
Neutral	21	27
Agree	48	61
Strongly agree	0	0
<b>TOTAL</b>	<b>78</b>	<b>100</b>

Table 4.22 shows that 3% of the respondents of Gatamathi water company strongly agree that the stakeholders loyalty to the company is not adequate, 9% disagree, 27% neutral and 61% agree. This indicates that, majority of the stakeholders felt that they were loyal to Gatamathi water company though a big percentage did not know.

**Table 4.23 Stakeholders Confidence in the Company**

<b>The Stakeholders Level Of Confidence To The Company Is Not Excellent</b>	<b>Frequency</b>	<b>Percentage</b>
Strongly disagree	0	0
Disagree	12	15
Neutral	19	24
Agree	41	53
Strongly agree	6	8
<b>TOTAL</b>	<b>78</b>	<b>100</b>

Table 4.23 shows that 15% of the respondents of Gatamathi Water Company disagree that the stakeholders level of confidence to the company is not excellent, 24% said its neutral, 53% agree and 8% strongly agree. This indicates that, a big proportion of the stakeholders felt that they did not have confidence in Gatamathi Water Company.

**Table 4. 24 Influence Social Corporate Responsibilities on Gatamathi Water Company**

<b>Rate Of Corporate Responsibility</b>	<b>Frequency</b>	<b>Percentage</b>
Very High	0	0
High	10	13
Average	24	31
Low	23	29
Very Low	21	27
<b>TOTAL</b>	<b>78</b>	<b>100</b>

Table 4.24 shows that the stakeholders were distributed from very high to very low in terms of influence of corporate responsibility on performance of Gatamathi water project.

**Table 4. 25 Influence of Accessibility on Performance of Gatamathi Water Company**

<b>Accessibility of Water X variable</b>	<b>Percentage</b>	<b>Rate of Performance Y variable</b>	<b>Percentage</b>
Very high	0	Very High	9
High	21	High	24
Average	47	Average	31
Low	27	Low	21
Very Low	5	Very Low	15
<b>TOTAL</b>	<b>100</b>	<b>TOTAL</b>	<b>100</b>



### Pearson Product Moment Correlation

Statistic	Variable X	Variable Y
Mean	20	20
Variance	208.28	56.8
Standard Deviation	16.757	7.536
Correlation Coefficient	<b>0.655</b>	
Confidence Level	95%	

The calculated Pearson product Moment Correlation coefficient of 0.655 at 95% confidence level implies that, there is a positive correlation between accessibility of water and performance of Gatamathi water company. This means that, with high accessibility of water services results in high performance of Gatamathi Water company.

**Table 4.26 Influence of Community Participation on Performance of Gatamathi Water Company**

Rate of community Participation	Percentage	Rate Of Performance Y variable	Percentage
Very High	15	Very High	9
High	24	High	24
Average	31	Average	31
Low	21	Low	21
Very Low	10	Very Low	15
<b>TOTAL</b>	<b>100</b>	<b>TOTAL</b>	<b>100</b>

### Pearson Product Moment Correlation

Statistic	Variable X	Variable Y
Mean	20	20
Variance	52.56	56.8
Standard Deviation	7.25	7.536
Correlation Coefficient	<b>0.8894</b>	
Confidence Level	95%	

The calculated Pearson product Moment Correlation coefficient of 0.8894 at 95% confidence level implies that, there is a strong positive correlation between

community participation and performance of Gatamathi water company. This means that, high community participation results in high performance of Gatamathi Water company.

**Table 4.27 Influence of Sustainability on Performance of Gatamathi Water company**

<b>Rate of Sustainability Variable X</b>	<b>Percentage</b>	<b>Rate of Performance Y variable</b>	<b>Percentage</b>
Very High	4	Very High	9
High	18	High	24
Average	42	Average	31
Low	13	Low	21
Very Low	23	Very Low	15
<b>TOTAL</b>	<b>100</b>	<b>TOTAL</b>	<b>100</b>

**Pearson Product Moment Correlation**

<b>Statistic</b>	<b>Variable X</b>	<b>Variable Y</b>
Mean	20	20
Variance	160.4	56.8
Standard Deviation	12.665	7.536
Correlation Coefficient	<b>0.81299</b>	
Confidence Level	95%	

The calculated Pearson product Moment Correlation coefficient of 0.81299 at 95% confidence level implies that, there is a strong positive correlation between sustainability of water and performance of Gatamathi Water Company. This means that, with high sustainability of water services results in high performance of Gatamathi Water Company.

**Table 4.28 Influence of Corporate Responsibility on Performance of Gatamathi Water Company**

<b>Rate of Corporate Responsibility (X)</b>	<b>Percentage</b>	<b>Rate of Performance Y variable</b>	<b>Percentage</b>
Very High	0	Very High	9
High	13	High	24
Average	31	Average	31
Low	29	Low	21
Very Low	27	Very Low	15
<b>TOTAL</b>	<b>100</b>	<b>TOTAL</b>	<b>100</b>

**Pearson Product Moment Correlation**

<b>Statistic</b>	<b>Variable X</b>	<b>Variable Y</b>
Mean	20	20
Variance	140	56.8
Standard Deviation	11.832	7.536
Correlation Coefficient	<b>0.64368</b>	
Confidence Level	95%	

The calculated Pearson product Moment Correlation coefficient of 0.64368 at 95% confidence level implies that, there is a positive correlation between corporate responsibility of Gatamathi Water Company and performance of Gatamathi Water Company. This means that, with high expenditure on corporate responsibility results in high performance of Gatamathi Water Company.

**CHAPTER FIVE**  
**SUMMARY OF THE FINDINGS, CONCLUSIONS AND**  
**RECOMMENDATIONS**

**5.0 Introduction**

This chapter gives the summary of the findings, discussions, conclusion and recommendation of the study which are meant to improve the performance of Gatamathi water and Sanitation Company. Finally are suggestions for further research.

**5.1.0 Summary of the major findings.**

This study found out that, 46% of the respondents of Gatamathi Water Company were male and 54% are female. This indicates that in Gatamathi Water Company is close to gender parity though women representation was more. 19% of the respondents had no formal education, 28% primary education 39% secondary education and 14% post secondary education. This shows majority of Gatamathi Water company had low education level with very few having attained post secondary education. The age of Gatamathi Water company stakeholders was evenly distributed from 18 years to 56 years and very few over 56 years old. 4% of the respondents of Gatamathi water project were Directors, 15% executive manager, 17% were supervisors, 27% were subordinates and 37% clients or customers. This indicates that customers were the majority.

On performance of Gatamathi Water Company, 10% of the stakeholders rate its performance as very good, 23% as good, 31% as average, 22% as poor and 14% as very poor. This shows majority of Gatamathi water stakeholders rate its performance as average.

Objective one of the study sought to examine the relationship between accessibility of water and performance of water projects in Gatamathi Water and Sanitation Company. This study established that Gatamathi Water Company does not provide adequate water to its clients with 10% of the respondents in Gatamathi Water Company agreeing that company's water discharge is adequate, 19% are neutral, 43% disagreed and 27% strongly disagreed. In addition demand for water among the community is adequate. However, 28% of the respondents of Gatamathi Water Company agreed that the ability to pay water services is satisfactory, 45% did not know, 26% disagreed and 1% strongly disagreed that the community can pay for the

water services. This indicates that, there is some elements of inability of the community to pay for water services.

Majority of the stakeholders felt that water accessibility is averagely rated for Gatamathi Water Company.

The calculated Pearson product Moment Correlation coefficient of 0.655 at 95% confidence level implies that, there is a positive correlation between accessibility of water and performance of Gatamathi Water Company. This means that, with high accessibility of water services results in high performance of Gatamathi Water Company.

Objective two of the study sought to assess the influence of participation of local communities on performance of water projects in Gatamathi Water and Sanitation Company. The study found out that 13% of the respondents of Gatamathi water company strongly agree that the level of creativity of stakeholders is satisfying, 40% disagree, 38% are neutral and 9% agree.

The respondents of Gatamathi Water Company agreed that 9% of stakeholder's level of responsibility to the company is adequate, 49% were neutral, 36% disagreed, while 6% strongly disagreed.

The calculated Pearson product Moment Correlation coefficient of 0.8894 at 95% confidence level implies that, there is a strong positive correlation between community participation and performance of Gatamathi water company. This means that, high community participation results in high performance of Gatamathi Water Company. This findings concurs with Burkey S. (2000) which found out that, participation by the people in the institutions and systems which govern their lives is a basic human right and also essential for realignment of political power in favour of disadvantaged groups and for social and economic development. Rural development strategies can realize their full potential only through motivation, active involvement and organization at the grassroots level of rural people.

Objective three of this study sought to examine the relationship between sustainability and performance of water projects of Gatamathi Water and Sanitation Company. This study established that, 11% of the respondents of Gatamathi Water Company agreed that the company has adequately equipped the stakeholders with relevant skills and knowledge, 22% are neutral, 54% disagreed and 13% strongly disagree. This indicates that Gatamathi Water Company had not equipped majority of its stakeholders with

relevant skills. In terms of capacity, 4% of the respondents of Gatamathi water company disagreed that the company stakeholders do not have the capacity to manage ecological and population pressure on the supply of water resources, 20% are neutral, 64% agree and 12% strongly agree. In addition, 14% of the respondents of Gatamathi Water Company strongly disagreed that the stakeholders were effectively able to manage the company's cost of operations, 50% of them disagreed, 12% were neutral and 24% agreed. This indicates majority of the stakeholders felt that the company management cannot effectively manage the company's cost. On future needs, 19% of the respondents of Gatamathi water company disagreed that the company is unable to continuously meet the current and future needs of its stakeholders, 23% are neutral, 52% agree and 6% strongly agree.

The calculated Pearson product Moment Correlation coefficient of 0.81299 at 95% confidence level implies that, there is a strong positive correlation between sustainability of water and performance of Gatamathi Water Company. This means that, with high sustainability of water services results in high performance of Gatamathi Water Company.

This findings concurs with the findings of ADB (2000) which noted that, projects and programmes that are built on a demand-responsive approach tend to be more successful and have better prospects for sustainability than those, which are supply-driven.

The study objective four sought to find out the relationship between motivation and performance of water projects of Gatamathi Water and Sanitation Company. 21% of the stakeholders of Gatamathi water company disagree that the company position of incentive is not sufficient, 28% neutral, 47% agree and 4% strongly agree. This indicates that, majority of the stakeholders felt that incentives provided by the company was sufficient. On corporate responsibility, 27% of the respondents of Gatamathi Water Company agreed that the company's social level to corporate responsibility is satisfactory, 42% were neutral, 28% disagreed and 3% strongly disagreed. This indicates that majority of stakeholders agreed that Gatamathi water company social corporate is not satisfactory.

The respondents of Gatamathi water company strongly agree that 3% of the stakeholders loyalty to the company is not adequate, 9% disagree, 27% neutral and 61% agree. This indicates that, majority of the stakeholders felt that they were loyal to

Gatamathi water company though a big percentage did not know. On the level of confidence to the company a big proportion of the stakeholders felt that they did not have confidence in Gatamathi water company.

The calculated Pearson product Moment Correlation coefficient of 0.64368 at 95% confidence level implies that, there is a positive correlation between corporate responsibility of Gatamathi Water Company and performance of Gatamathi Water Company. This means that, with high expenditure on corporate responsibility results in high performance of Gatamathi Water Company.

### **5.2.0 Conclusion**

This study concludes that, Gatamathi Water Company is more close to achieving gender parity though women representation was more. In addition, majority of Gatamathi Water Company had low education level with very few having attained post secondary education. The age of Gatamathi Water company stakeholders was evenly distributed from 18 years to 56 years and very few over 56 years old.

On performance of Gatamathi Water Company, this study contends that the performance is average. This study established that Gatamathi Water Company does not provide adequate water to its clients. In addition demand for water among the community is adequate. However, there is some elements of inability of the community to pay for water services.

The calculated Pearson product Moment Correlation coefficient of 0.655 implies that, there is a positive correlation between accessibility of water and performance of Gatamathi Water Company. This means that, with high accessibility of water services results in high performance of Gatamathi Water Company.

The calculated Pearson product Moment Correlation coefficient of 0.8894 at 95% confidence level implies that, there is a strong positive correlation between community participation and performance of Gatamathi Water Company. This means that, high community participation results in high performance of Gatamathi Water Company.

This indicates that Gatamathi Water Company had not equipped majority of its stakeholders with relevant skills. In terms of capacity, majority of the stakeholders felt that the company management cannot effectively manage the company's cost. The calculated Pearson product Moment Correlation coefficient of 0.81299 at 95%

confidence level implies that, there is a strong positive correlation between sustainability of water and performance of Gatamathi Water Company. This means that, with high sustainability of water services results in high performance of Gatamathi Water Company.

Majority of stakeholders agreed that Gatamathi water company social corporate is not satisfactory. The calculated Pearson product Moment Correlation coefficient of 0.64368 at 95% confidence level implies that, there is a positive correlation between corporate responsibility of Gatamathi Water Company and performance of Gatamathi Water Company. This means that, with high expenditure on corporate responsibility results in high performance of Gatamathi Water Company.

This finding therefore contends that, performance of Gatamathi Water Company is influenced strongly by community participation, sustainability, accessibility of water and lastly incentives and corporate responsibility in that order.

### **5.3.0 Recommendations**

According to African Development Bank 2000, water is a social good and dimensions of water resources management should be analyzed adequately from the social perspective with a view to elucidating social issue which is critical to achieving integrated water resources management as well as maximizing social benefits and mitigating detrimental social impacts. Water development, use and management should be based on a participatory approach, involving users, planners, implementers and policy makers at all levels. To realize the action plan formulated in the some of recommendations to address the social factors affecting average performances of water project include;

#### **5.3.1 Promotion of social sustainability of water projects**

This is empowering the users in terms of technical and management empowerment, environment and financial sustainable. Mainstream local water undertakers in the decision making processes Water user charge: establishment of Catchments protection levy; ensure that water utilities plough back a percentage of their proceeds into water conservation Implementation of User pays and polluter pays principle. This can be realized by creating awareness to the community on the above especially maintenance of ecosystem preservation of water and income generation programs. This would



help to preserve and expand the available resources for their wellbeing. Integrate the needs of the poor, women men and vulnerable groups

### **5.3.2 Enhancement of community participation**

Lack of well of project product buying in the project contributes greatly to the future of project. Therefore the stakeholders especially users should be engaged in all stages of project cycle from planning to exit. The largest numbers of water user are women and therefore they should be reasonably being represented in decision making organs. Ensure effective and realistic integration and coordination amongst the relevant sectors, for example for virtual water Agriculture and Water ministries. Other critical sectors are environment, finance, energy, livestock, tourism etc. Enhance interaction towards enhancing water resources management, development and use.

### **5.3.3 Implement of accessibility of water services**

Accessibility in terms of availability and affordability of water should be ensured by establishment of equilibrium of demand and supply of the product. This can be adequately addressed by ensuring more adaptive approaches and mechanisms of balancing the water supply and increase of population and the demand plus cost of production. The water manager should be in a position to get the correct information of the above mentioned social dynamics and conserve enough water supplies especially when it is excess. Develop tariff guidelines that take into consideration the socio-economic aspects of Kenyans. Safe, sufficient, affordable and within reach e.g. Water facilities should be located at 200m in high potential and 5km in low potential. Quality should conform to WHO & KBS standards Assess the socio economic professionally loss Time women spend caring for the sick and the added burden

### **5.3.4 Enhancement of motivational aspect**

The water company's should appreciate and embrace the element of corporate social responsibility which has a long term benefit on the customers' loyalty to the company. The company should also think of organizing stakeholders' awareness days to provide, connect to company's business and the consumer. Build on capacity for efficient use of water and investing in research in water and sanitation technologies e.g. water harvesting, child and women friendly designs.

#### **5.4.0 Suggested future research**

The environmental effect on the water project performance

The role of women in water management

The contribution of social poverty rate on the performance of water project

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## **APPENDICES**

### **APPENDIX I**

#### **LETTER TO THE RESPONDENT**

**FRANCIS WACHIURI MURIUKI  
UNIVERSITY OF NAIROBI  
SCHOOL OF CONTINUING & DISTANCE EDUCATION  
P.O. BOX 30197,  
NAIROBI.  
JULY 2012.**

**Dear Sir/Madam,**

#### **RE; RESEARCH QUESTIONNAIRE**

I am a postgraduate student in the Department of Extra Mural Studies at the University of Nairobi.

I am currently carrying out a research on the social factors influencing the success of Gatamathi Water and Sanitation Company in Murang'a County. You have been selected to participate in this study.

Kindly complete the attached questionnaire honestly to enable gather data for the research. I wish to assure you that the information provided will not be used anywhere else beyond this study.

Therefore, to maintain confidentiality, please do not indicate your name or that of your facilitator or learning centre.

Yours faithfully,

**F.W. Muriuki**

**APPENDIX II**  
**QUESTIONNAIRE**

**SECTION 1: DEMOGRAPHIC / GENERAL INFORMATION**

1. What is your gender?

Male  Female

2. What is your level of Education?

No formal education

Primary education

Secondary education

Post secondary education

3. What is your age bracket?

a) 18-25

b) 26-35

c) 36-45

d) 46-55

e) 56 and above

4. What is your position to Gatamathi Water Company?

a) Director

b) Middle manager

c) Supervisor

d) Subordinate

e) Client (consumer)

5. How would you rate the performance of Gatamathi Water Project for the last three years?

a) Very good

b) Good

c) Average

d) Poor

e) Very poor

6. Which is the most common household income category of consumers of the company?

- a) Below Ksh. 1,000
- b) Ksh. 1,001 – Ksh. 3,000
- c) Ksh. 3,001 – Ksh. 5,000
- d) Ksh. 5,001 – Ksh. 10,000
- e) Above Ksh. 10,000

7. At what rate does the following social factors contribute to the level of performance of Gatamathi Water Company.

	Very high	High	Average	Low	Very low
a) Accessibility					
a) Community participation					
b) Sustainability					
d) Motivation					

## SECTION 11: SOCIAL FACTORS

Please tick the box that best describes your opinion about social factors that affects rate of performance of Gatamathi Water and Sanitation Company. Strongly disagree (SD = 1), Disagree (D=2), Neutral (N=3), Agree (A=4), Strongly Agree (SA)

### a) Accessibility

	1= SD	2=D	3=N	4=A	5=SA
8.Company's water discharge/supply is not adequate					
9.The community water demand is not adequate					
10.The ability to pay water services is not satisfactory					
11.The cost changes of water services are not satisfactory					



b) **Community Participation.**

	<b>1= SD</b>	<b>2=D</b>	<b>3=N</b>	<b>4=A</b>	<b>5=SA</b>
12.The level of stakeholder's initiative to the company is not satisfactory.					
13.The creativity level of stakeholder's of Gatamathi is satisfying.					
14.The stakeholder's level of responsibility to the company is not adequate.					
15.The stakeholder's level of co-operation to the company is not excellent.					

**c) Sustainability**

	<b>1= SD</b>	<b>2=D</b>	<b>3=N</b>	<b>4=A</b>	<b>5=SA</b>
16.The company has not adequately equipped the stakeholders with relevant skills and knowledge.					
17.The company's stakeholders do not have the capacity to manage ecological and population pressure on the supply of water resources.					
18.The company's stakeholders were effectively able to manage the company's cost of operation.					
19.The company was unable to continuously meet the current and future needs of its stakeholders.					

**d) Motivation**

	<b>1= SD</b>	<b>2=D</b>	<b>3=N</b>	<b>4=A</b>	<b>5=SA</b>
20.The company's position of incentives is not sufficient.					
21.The company's social level corporate to responsibility is not satisfactory.					
22.The stakeholders loyalty to the company is not adequate					
23.The stakeholder's level of confidence to the company is not excellent.					

## **APPENDIX III:**

### **Interview Guide Schedule for Management**

1. What is the performance level of Gatamathi Water and Sanitation Company in the last 3 years?
2. How are the social factors affecting the performance of Gatamathi Water and Sanitation Company?
  - (i) Accessibility
  - (ii) Participatory
  - (iii) Sustainability
  - (iv) Motivation
3. What are your recommendations of improving the performance rate of Water and Sanitation Companies through addressing social factors?

