International Journal of Economics, Commerce and Management

United Kingdom http://ijecm.co.uk/ Vol. III, Issue 11, November 2015 ISSN 2348 0386

FACTORS INFLUENCING PERFORMANCE OF COMMUNITY WATER PROJECTS IN NJORO SUB COUNTY

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Abstract

Water is an essential commodity that has economic, social and cultural value to communities. Consequently, many communities in Kenya come together and form community water projects to supplement what governments does in terms of supplying this essential commodity. This study aimed at determining factors that influence performance of community water projects in Njoro Sub-County. The specific objective was to establish the effects of vandalism, illicit brews and stakeholders' participation on the performance of community water projects. In order to achieve the objectives, the researcher adopted a descriptive design where data was collected from a sample of 91 participants using structured questionnaires, and analyzed using both descriptive and inferential statistical techniques. Results revealed that only stakeholders' participation has a significant and positive effect on the performance of community water projects in Njoro sub-county. Available data did not support the existences of a statistically significant relationship between illicit brew consumption, vandalism, and performance of community water projects. These findings have significant implication on community water projects in Njoro and other parts of country, project management as discipline, and future studies on the subject of performance of community projects in Kenya.

Keywords: Performance; Vandalism; Stakeholders' Involvement; Illicit Brew



INTRODUCTION

The idea of "community" came about where people gathered around a common area for their mutual benefit (Anderson, 2010). Sharing a language, customs, ideas, skills, goods and services, or protection from enemies were some of the advantages the people derived from being a part of a group. Over the years the idea of community has changed to accommodate different things. While different definitions mean different things, the idea is the same; that a group comes together or lives together to share something that is of value to the members of that community. The United Nations defines Community development as "a process where community members come together to take collective action and generate solutions to common problems."

According to WHO, one billion people have no access to clean potable water and nearly two billion people have no access to sanitation. Over 5 million deaths occur per year as a result of water related diseases; hence, better water management can certainly contribute to the health MDGs. Additionally, agriculture is the single largest user of fresh water on the planet and it is also the largest economic activity of the rural poor. Water services are not limited to rural water supply and sanitation. There are numerous competing uses for water including drinking, sanitation, irrigation, energy, and navigation (World Bank, 2002).

Most rural villages do not have regular access to clean drinking water and face severe water shortages particularly during the dry season. This increases illnesses and morbidity, decreases available time and resources for productive activity and thereby reducing the general wellbeing of communities. To improve access to safe drinking water, several governmental and non-governmental organizations (NGOs) initiated community water projects in rural areas, in the late 1980s and early 1990s (World Bank, 1995). It was realized that achieving lasting benefits from water supply interventions involves much more than building facilities. The projects highlighted the importance of involving the community in all aspects of service delivery, the use of appropriate technologies, and the role of governments as service promoter rather than providers. In many ways, the decade represented a transitional period in the Rural Water Supply (RWS) sector moving from the traditional to a new approach.

Kenya is a water scarce country with a per capita of 647 cubic meter, which is below the world recommended per capita of 1000cubic meters (Mogaka, 2009). There is unequal distribution of water in the country with some areas having excess and others having less than they require, which on average makes the country water scarce. Due to the unequal distribution, water sources are often far from the village, and women must walk for hours to fetch water on a daily basis. Some families even keep their daughters out of school so that they can help collect water. These girls follow their mothers and walk, on average, 10 miles every day. While walking



to get water, particularly when they must walk alone before or after daylight hours, women are vulnerable to rape and other violent attacks. Carrying heavy load over long distances has detrimental health effects, including back and chest pains, developmental deformities, arthritic disease, and miscarriages (WHO and UNICEF, 2008). In an effort to reduce these distances, communities come together and form community water projects. These water projects improve the quality of life for families by reducing the daily burden of water collection and incidences of water related diseases (WHO and UNICEF, 2005). The community water projects also enable farmers to increase crop production and nutrition levels for their families. They also give communities water maintenance and conservation skills training to reduce soil erosion and depletion.

In the Njoro Sub-county, there are several water supply sources to communities including protected springs, piped water from Njoro River, municipal water, community borehole with kiosks, community borehole with individual connections and rain water harvesting. Households that are not connected with pipe water pose a risk of drinking untreated water from open wells or surface waters. The main risk of the use of untreated water includes high incidents of water related diseases in the area. Depending on the source, women in Njoro Subcounty face the challenge of walking long distances to draw the water or make long queues waiting to fetch the water. This narrows down the public life of women restricting women to participate in the public activities.

Statement of the Problem

Owing to the fact that Kenya is a water scarce country and the waters available are not evenly distributed, (Mogaka, 2009), people who don't have water sources near their places of habitation are forced to walk for kilometers to collect this precious resource. They spend many hours to collect the resource, which could have been spent on other activities like subsistence farming or managing small businesses (WHO and UNICEF, 2008). Water is a socio and economic commodity as a community that has safe water is less prone to water borne diseases making it a healthy community. Children in these communities also have better access to education.

Despite the government and non-governmental organizations making good efforts to supply water to citizens, it has not been able to cover all areas especially rural areas. Consequently, it has become necessary for communities to organize themselves and launch community water projects to ensure they bring water closer to their homes (WHO and UNICEF, 2005). Many community water projects are started, but fail to realize the intended objectives with a good number of these water projects collapsing before completion. Other water projects



run for one or two years after completion and then collapse; therefore, they fail to meet the intended objectives. This study seeks to establish factors that affect the performance of the community water projects in Njoro Sub County.

THEORETICAL LITERATURE

This study was guided by three theories: Stakeholders' theory, Systems theory and Crime Opportunity theory. Stakeholder theory argues that every legitimate person or group participating in the activities of a firm or project do so to obtain benefits, and that the priority of the interest of all legitimate stakeholders is not self-evident (Donaldson, and Preston, 1995). Stakeholder Theory values both internal and external stakeholder who include employees, managers and owners as well as financiers, customers, suppliers, governments, community and special interest groups. This theory also emphasizes that the stakeholders also benefit from their participations. This theory, therefore, assist in understanding the importance of community participation in the success of community projects.

Systems theory is a working hypothesis, the main function of which is to provide a theoretical model for explaining, predicting and controlling phenomenon (Bertalanffy, 1962). Hartman et al., (2010) observed that all organizations consists of processing inputs and outputs with internal and external systems and subsystems, which is helpful in providing a functional overview of any organization or project. Community projects need a functional system to manage their projects well. Kuhn (1974) argues that systems need to be controlled as failure in one component leads to failure of another and, ultimately, the failure of the entire system. This theory views an organization/project as a social system consisting of individuals who cooperate within a formal framework, drawing resources, people and finances to produce products. Involvement of all stakeholders will ensure efficient and effective management of their projects and other resources for maximum outputs.

Crime opportunity theory suggests that offenders make rational choices and thus choose targets that offer a high reward with little effort and risk like cutting a piece of galvanized pipe and deliver to the market of scrap metal dealers, which is readily available. The occurrence of a crime depends on two things: the presence of at least one motivated offender who is ready or willing to engage in a crime, and the conditions of the environment in which that offender is situated creating opportunities for crime. All crimes require opportunity but not every opportunity is followed by crime. Similarly a motivated offender is necessary for the commission of a crime but not sufficient. This theory focuses on how variations in life-style or routine activities affect the opportunities for crime (Hindelang, Gottfredson, and Garofalo 1978). Opportunity thus becomes the limiting factor that determines the outcome in environments prone to crime



because the offender generally has little or no control over the conditions of the environment, and the conditions that permit particular crimes are often rare, unlikely or preventable. Sources of water are in many times in areas where people don't live like protected area which are normally the water catchment areas. This creates a good environment for the crime of vandalism.

EMPIRICAL LITERATURE

The determinant factors for the performance of rural water supply systems are categorized in to two main categories. These are pre implementation factors and post implementation factors. Community participation, technology selection, site selection, demand responsiveness, construction quality, population and training are some of the pre-implementation factors. Postimplementation factors are technical support, community satisfaction, institutional and financial management, training and willingness to sustain the water project (UNDP-WSP, 2006). One of the pre implementation factors for rural water supply systems is demand responsive approach. In this context 'demand' is defined as the quantity and quality of water, which community members will choose to consume at a given price (Gizachew, 2005). In a demand responsive approach, beneficiaries should feel the need for safe drinking water supply in order to identify safe drinking water supply projects. Water projects are more or less demand responsive to the degree that beneficiaries make choices and commit their resources in support of their choices (Gebrehiwot, 2006). If there is willingness in the community to provide valued resources in the exchange for services then these community members value the service and as a result demand for supply of water will facilitate the management of the water project enhancing the rate of performance of the project (Gizachew, 2005). Project performance can be measured and evaluated using a large number of performance indicators that could be related to various dimensions (groups) such as time, cost, quality, client satisfaction, client changes, business performance, health and safety (Cheung et al. 2004; DETR 2000). Time, cost and quality are however the three predominant performance evaluation dimensions.

Community projects are important in development of an area because they have several advantages. Some of the advantages include funds being spent entirely on the projects, rather than maintaining administrative bureaucracies; projects are conducted at the request of the community with full community participation and ownership whereby community-driven projects are effectively operated, maintained and utilized. The projects foster local and regional capacity to provide basic infrastructure and services, build indigenous expertise, and develop local and regional governance capacity thus facilitating in the long term more democratic, decentralized, participatory governance; the projects reduce aid dependency and learn how to make sacrifices;



community water projects conducted by local communities and indigenous NGOs foster rather than undercut governmental capacity and legitimacy.

Participatory development is the most important approach towards enabling communities to help themselves and sustain efforts in development work. Communities are no longer seen as recipients of development programmes but rather they have become critical stakeholders who have an important role to play in the management of programmes and projects in their areas. Community stakeholders are community-based mechanisms that can help support and sustain a programme or project. For example, in implementing education projects, the mechanism can be the school governing council or the parents, teachers and community association (NGO Management School Switzerland, 2014).

Water is scarce and therefore not all people live next to water sources creating a need to bring the water closer to their palces of habitation. This leads to formation of community water projects since individuals can not afford. Successful performance is so much dependent on involvement of communities from initiation, through implementation to project closure. Engaging them will ensure that the project responds to local needs utilizing local resources. This will also help understand the community context which will help determine the characteristics of the community and work out where organizers interests intersect with the needs of the local community (DIY, 2015).

In Tanzania, the problem of participation in water projects is a historical phenomenon which can be traced back to the early 1960s, when the country gained its independence. The government formulated a free water policy for all which was put in place in 1969. Rural people were no longer required by law to pay for their water services. In 1971, this policy was consolidated and the government declared to provide rural people an easy access to water facilities and free water services, within 400 meters from their household by the year 1991 (Kasiaka, 2004). Despite the good intention of the government, most of the constructed water schemes between 1970s and 1980s failed to achieve sustainability. This was due to a number of factors, among them being the practice of Supply Driven Implementation Approach (SDIA) where the government was the sole initiator, planner and provider of water service interventions. The government was to carry out all operations and maintenance of village water schemes. In this context, all water works belonged to the central government. However, the outcome for this trend of affair was a lack of commitment by the project beneficiaries. This was worsened by the economic crisis that occurred in the same period where all Ministries were forced to reduce expenditure on recurrent costs seriously affecting water scheme operations and maintenance (David and Brikke, 1995).



The economic crisis forced the government to introduce cost sharing strategies in construction, operation and maintenance of water schemes hence community-based water systems, following the 1991 National Water Policy (NWP) which required communities to actively participate in water project cycles (Kasiaka, 2004). Cost sharing strategies were to be effected through establishment of Village Water Committees (VWC) and Village Water Funds (VWF). It was through VWC that communities were to participate in the initiation phase, planning, construction, operation and maintenances of water project activities. Free water services concept had developed in the peoples' minds and hence no commitment syndrome was making it difficult to convince the community to engage and participate in water project activities and particularly paying for water service charges. Moreover, participation of beneficiaries was only limited to unskilled labour. The lack of sense of ownership by beneficiaries then affected operations and maintenance of water schemes as well as its sustainability (Tanzania Social Action Fund, 2002).

Conceptual Framework

A conceptual framework is an illustration of how the variables relate to each other. In the conceptual framework there are independent and dependent variables. Dependent variable influences other variables (Mugenda, 1999). In this study independent variables are identified as illicit brews, vandalism and stakeholders' participation while the dependent variable is the performance of community water projects which is also the factor under observation. It is measured in determination of the effect of the independent variable.





Critique of Literature Reviewed

People are not very good at defining, particularly in detail, what they want. However, people are fairly good at indicating what they think they want and then when an option is presented to them what they like and don't like about it. In other words, we need to work with our stakeholders to identify what they think they want, produce something which reflects that understanding, get feedback from our stakeholders, and then update our solution to reflect our improved understanding. The implication is we need to work in a more evolutionary and collaborative



manner if we're to provide solutions which reflect our stakeholders actual needs, and to do that we must work closely and regularly with stakeholders. From the literature review, most researchers have used stakeholder's participation theory as the guiding theory and especially the community who are major stakeholders and beneficiaries. Even if all the deliverables are met and the objectives are satisfied, if your key stakeholders aren't happy, nobody's happy (Watt 2013).Participation of stakeholders have many benefits which include local people to employ their local knowledge and techniques, poverty reduces poverty by use of local labour and investment; promotes the use of local knowledge and local technologies which in turn helps to reserve them; local people have power and make decisions, thus creating accountable and democratic local institutions. Until recently, projects often failed because they used topdown approaches in which community members had little or no say on deciding what or how services were to be implemented. Promotion of the demand responsive approach as part of an effort to achieve effective and sustained community managed services. Stakeholder's participation theory enhances this.

METHODOLOGY

This study adopted a descriptive design. According to Mugenda & Mugenda (2003), descriptive research attempts to describe such things as possible behavior, attitudes, values and characteristics. Opinions of people were sought with the use of a structured questionnaire and percentages generated for comparison. This approach was used because it facilitates statistical and objective analysis of the research issue (Mugenda and Mugenda 2003). It also provided a measure of what many people think, feel or behave in a certain way and uses statistical analysis to determine the results.

The target population in this study comprised of 12,700 members of 36 community water projects in Njoro Sub County. The Taro Yamane (1967) simplified formula for proportions was used to determine the appropriate sample size for this study.

n = N

1+N*(e)²

Where

n - the sample size

N - the population size

e - the acceptable margin of error

Taking the population size of 12, 700 and a desired acceptable margin of error of 10%, the formulae gave a sample size of 99 people. The researcher utilized the random sampling



technique to select 99 participants from the population of 12,700 people. The random sampling technique was used to select the 99 participants.

A structured questionnaire was used to collect data from the sample. A pilot test was undertaken one week prior to the real research in order to determine the reliability of the questionnaire in measuring the three independent variables and the dependent variable with a threshold of 0.7. The test yielded a Cronbach's of more than 0.7 for all the variables; hence, the questionnaire was deemed reliable.

Variable	Number of Items	Cronbach's Alpha
Illicit Brew Consumption	8	0.748
Vandalism	7	0.809
Stakeholder Involvement	7	0.905
Project Performance	5	0.796

RESULTS AND DISCUSSION

Response Rate

Out of the 99 questionnaires that were distributed, 91 were duly filled and returned to the researcher making a response rate 91.9%. This is a high response rate which therefore increases the representativeness of the data to the population of study, and reduces response bias and the margin of error (Sifer, Puddy, Warren & Roberts, 2002).

Demographic Characteristic of the Respondents

The researcher sought to understand the demographic characteristics of the sample. An analysis of the participant gender revealed that 53.8% of the participants were female, and 46.2 were male (see table 2). This could imply that there were more female members than male members in the community water projects in Njoro; more women than men were willing to participate in the study or more women were available during the day when questionnaires were being presented.

An analysis of the respondents' education level showed that 10% of the participants had attained the primary level education, 35% had secondary level education, 34% had college level education, and the remaining 12% had university level education as reflected in table 2. The education characteristic of the sample is closer to the education characteristics of Nakuru County, where 26% have primary level education, 36% have secondary level education, and 14% have tertiary education (Kenya National Bureau of Statistics, 2013). This shows that the sample is more less a representative of the population.



In terms of age, table 2 show that a majority of the respondents (35.2%) were in the 21-20 years age bracket, 24.2% were between the age of 31 and 40 years, 17.6% were between the age of 41-50 years, 13.2% were in the 51-60 age bracket, 5% were above 60 years while 4.4% were between 15 and 20 years. These figures also reflect the age characteristics of the county (Ibid). The researcher also sought to determine the number of years that the respondents have participated in community water projects. A majority of the participants (33.0%) have participated in community water projects for between 5 and 9 years while 21.9% have participated in the projects for more than 10 years. The presence of large number of participants who have participated in community water projects for many years within the sample increases the validity of findings since these participants are likely to have in-depth information about community water projects in the area.

		Frequency	Percent	Cumulative Percent
Gender of Respondent	Male	42	46.2	46.2
	Female	49	53.8	100.0
	Total	91	100.0	
Education Level of	Primary	10	11.0	11.0
Respondent	Secondary	35	38.5	49.5
	College	34	37.4	86.9
	University	12	13.1	100
	Total	91	100.0	
Age of the Respondent	15-20 years	4	4.4	4.4
	21- 30 years	32	35.2	39.6
	31-40 years	22	24.2	63.8
	41-50 years	16	17.6	81.4
	51-60 years	12	13.2	94.6
	61 years and above	5	5.4	100.0
	Total	91	100.0	
Years of participation in	<1 years	21	23.1	23.1
water projects	2-4 years	20	22.0	45.1
	5-9 Years	30	33.0	78.1
	10 years and above	20	21.9	100.0
	Total	91	100.0	

Table 2: Demographic Characteristics of the Sample

Descriptive Analysis

Descriptive Aanalysis of Alcohol Consumption Responses

Illicit brew consumption is a major problem in Nakuru County (King'ori, Kithuka & Maina, 2014). This is a reason why the study sought to examine the effect of illicit brew consumption of the performance of water projects in Njoro sub-county. The researcher asked participants to respond to a set of questions regarding how illicit brew consumption in Njoro sub-county affects



community water projects. The first question inquired whether the participants felt that illicit brew consumption within the area was on the increase. A majority of the respondents (89%) agreed that illicit brew consumption was on the increase, 8.8% were not sure and 2.2% disagreed with the statement. The responses suggest that alcohol consumption of Njoro sub-county is increasing, which is congruent with the findings of the National Authority for Campaigna against Alcohol and Drug Abuse (2012), which revealed that there was a spike in the consumption of illicit brews in the country. Girish, Kavita, and Benegal (2010) also found that uncontrolled alcohol consumption has a detrimental impact on users' health, social and psychological wellbeing.

Participants were asked whether illicit brew consumption was affecting the availability of unskilled labor in the community water projects. A majority of the participants (89%) felt that illicit brew consumption was indeed affecting the availability of unskilled labor while 8.8% were not sure and 2.2% said that illicit brew does not affect availability of unskilled labor. This is in line with Birech, Kabiru, Misaro, and Kariuki (2013), who found that alcohol abuse in Nandi Community was affecting the availability of labor by interfering with the community member's stability, education, physical and emotional wellbeing, and social relationships.

The researcher also sought to find out whether participants felt that illicit brew consumption was affecting financial contributions to water projects. A majority of the respondents 67.1% felt that illicit brew consumption was affecting financial contribution, 18.7% were not sure, and 14.3% said that illicit brew consumption was not affecting financial contributions. The findings suggest that, generally, illicit brew consumption was affecting community members' ability to make financial contribution towards community water projects. These findings are consistent with the study by the National Authority for Campaigna against Alcohol and Drug Abuse (2012), which found that illicit brew consumption lowered families' financial wellbeing by reducing farm productivity and encouraging consumers to divert financial resources and family assets.

The fourth question sought to find out whether illicit brew consumption was affecting family relationships. This question is important because families are the basic units of communities; hence, conflicts with families affect the functioning of the community. If illicit brew consumption affects family relationships, it will affect the communities' ability to execute projects. Majority of the respondents (91.2%) reported that illicit brew consumption was affecting family relationships, 2.2% were not sure, and 6.6% felt that the illicit brew had little impact on family relationships.

Participants were also asked whether illicit brew consumers in the area were selling family property to get money for the purchase of the brew. This information was also important



for it highlighted the effect of illicit brew consumption on family relationships and family's financial contribution to community projects. A majority of the respondents (83.6%) said that illicit brew consumers in the area were selling family property, 3.3 disagreed with this claim, and 13.2% were not sure. The responses demonstrate that it is a common habit for illicit brew consumers in Njoro sub-county to sell-off family property in order to get money for purchasing illicit brew. However, this observation is not unique to Njoro sub-county as the National Authority for Campaigna against Alcohol and Drug Abuse (2012), in the study, had also observed that alcohol abusers in other parts of the country were diverting family finances and asset in order to finance their drinking habits.

Table 3: Descriptive Analysis of Illicit Brew Consumption

Key: 5= Strongly agree, 4= Agree 3= Neutral, 2= Disagree, 1= Strongly Disagree						
Statement	5 %	4 %	3 %	2 %	1 %	
Illicit brew consumption is on the increase	53.8	35.2	8.8	2.2	0	
Illicit brew consumption affect availability of unskilled labor	59.3	29.7	8.8	0	2.2	
Illicit brew consumption affect financial contribution to community projects	37.4	29.7	18.7	8.8	5.5	
Illicit brew consumption affect family	62.6	28.6	2.2	4.4	2.2	
Illicit brew consumers sell family property to get the money to buy the brew	49.5	34.1	13.2	3.3	0	

Descriptive Analysis of Vandalism Responses

Studies suggest that vandalism is one of the significant problems that community water projects encounter. In South Africa, vandalism has become widespread leading to the passing of punitive laws in order to reduce it (Matshediso, 2014). In the current study, participants were asked a set of questions aimed at examining the state of vandalism of water pipes and equipment in Njoro sub-county. First, the participants were asked whether vandalism was a major cause of water interruption in the area. A majority of the participants (75.9) reported that vandalism was a major cause of water supply interruption, 17.6% were not sure, and 6.6% disagreed with this claim. This finding suggests that vandalism is a major problem for community water projects in the area. The findings are also consistent with the studies by Amori, Eruola, Makinde, and Ufoegbune (2012); Ola and Adewale (2014), and Turalam and Properjohn (2011), who found that vandalism was a major problem affecting distribution of water.



The researcher also sought to find out whether community members incur the cost of repairing vandalized water pipes and other equipment. Vandalism not only affect water project by interrupting water supply, but act of vandal also increase the cost of implementing projects and maintain the product. It is estimated that vandalism costs the Garissa County five million shillings in 2014 in the form of repairs and replacement of stolen and damaged equipment. In the current study, a majority of the respondents (63.8%) reported that community members are often forced to contribute money in order to cater for the repair of vandalized water pipes and fittings. This finding implies that vandalism has an effect on cost of implementing water projects in the area.

The researcher also sought to find out whether there was any link between vandalism of water infrastructure and the alcohol problem in Njoro sub-county. A majority of the respondents (70.4%) felt that illicit brew consumers were the primary perpetrators of vandalism in the area, 22% were not sure about this link, and 7.7% denied the existence on any link between vandalism and alcohol consumption.

Muthoni (2011) recommended that one of the effective ways of combating vandalism is to strengthen laws that prohibit vandalism, as well as, the law enforcement systems. In this light, participants were asked whether they felt that the county government has done enough to reduce cases of vandalism in the area. A majority of the respondents (53.9%) were concerned that the county government had not done enough to stop vandalism, 18.7% were not sure, and 27.5% were satisfied with the county government efforts to stop vandalism. These responses suggest that the residents of Njoro sub-county are not satisfied with what the law enforcement agencies are currently doing to combat vandalism.

Descriptive Analysis of Stakeholders' Involvement Responses

The research also asked a set of questions that aimed at examining the extent to which key stakeholders are involved in community water projects. The first question sought to find out whether community members take part in identifying, initiating, and planning water projects.

Key: 5= Strongly agree, 4= Agree 3= Neutral, 2= Disagree, 1= Strongly Disagree							
Statement	5 %	4 %	3 %	2 %	1 %		
Vandalism is a major cause of water supply interruption	44.0	31.9	17.6	5.5	1.1		
Vandalism of water pipes and fitting is a serious problem in Njoro sub-county	30.8	50.5	13.2	4.4	1.1		
Community members incur the cost of repairing vandalized water systems	28.6	35.2	24.6	6.6	5.5		
Illicit brew consumers are major vandalism suspects	34.1	36.3	22.0	5.5	2.2		
The county government is doing enough to curb vandalism problem	11	16.5	18.7	29.7	24.2		

Table 4: Descriptive Analysis of Stakeholders' Involvement



This question was important because studies show that involving key stakeholders in project planning and execution increases the chances of project success (Lane, 2004). A majority of the respondents (86.9%) reported that community members were involved, 9.9% were not sure, and 3.3% said that community members are not involved. The responses suggest that community members are adequately involved in water projects. This finding is similar to Mutala (2014), who found that communities were highly involved in water projects on Shianda Division, Kakamega County.

Participants were asked whether they felt that stakeholders' involvement in water projects was important. A majority of the respondents (82.5%) felt that community involvement was important to the success of the project, 14.3% were not sure, and 3.3% felt that community involvement was not important. The perception of communities regarding the importance of involving key stakeholders in their project is key indicator of the extent to which these communities actually involve stakeholders in the project. Since a majority of the respondent think that involving key stakeholders in community projects is important it is more likely to find that many of the water projects in Njoro sub-county do involve stakeholders in their projects.

The researcher also sought to find out whether key stakeholders are involved in budgetary allocation meetings for water projects. A majority of the participants (52.8%) gave a positive response, 20.9% were not sure, and 25.4% gave a negative response. The researcher also asked whether the involvement of key stakeholders in the planning and execution of projects has improved the members' problem solving skills. A majority of the respondents (74.8%) felt that the involvement has improved problem solving skills, 14.3% were not sure, and 11% felt that no improvement has been realized. A majority of the respondents (78.1%) also felt that stakeholders' involvement has given members knowledge and technical skills.

Descriptive Analysis of the Performance of Water Project Responses

Project performance refers to how well a given project is planned and implemented (Gizachew, 2005). Participants were also asked a set of question aimed at understanding the performance of community water projects in Njoro sub-county. The first question sought to examine participants' perceptions regarding the performance of water projects in the area in comparison with other projects. Table 5 show that a majority of the participants (59.4%) reported that water projects perform better than other projects, 28.6% were not sure, and 12% said that water projects do not perform better than other projects. The responses suggest that community water projects in Njoro sub-county are generally performing according to expectation. This finding is consistent with the study by Mathenge, Luwesi, Shisanya, Mahiri, Akombo, and Mutiso (2011), who found that community water projects in Ngaciuma-Kinyarith Catchment, Tana Basin, and



the Mount Kenya Region had achieved most of the targets including ensuring domestic water security and promoting agriculture.

Project performance can be measured from various perspectives. Governance is one of these perspectives. Project governance has a significant impact on project cost, project completion time, and the extent to which the project meets quality expectation (Cheung et al., 2004). Participants were also asked whether they felt that there was good governance in the community water projects. A majority of the participants (64.9%) said that the water projects had good governance, 18.7% were not sure, and 16.4% said that water projects did not have good governance (see table 5). The responses suggest that, generally, the community water projects in Njoro sub-county have good governance. This was an important issue since project governance is a critical indicator of success. In their study of Community Based Organization (CBO) in Kisii County, Mwaura and Ngugi (2014) found that good governance and financial management practices had a significant positive influence on the performance of CBO projects. The researcher also sought to examine the extent to which the water projects meet the communities' needs. This question was importance because the ability to meet the needs of intended beneficiaries is a also critical performance indicator for any project (Gizachew, 2005). Results in table 5 reveal that a majority of the respondents (72.6%) reported that the water

projects have met the needs of the communities, 14.3% were not sure, and 13.1% reported that the projects did not meet the needs of the communities.

Key: 5= Strongly agree, 4= Agree 3= Neutral, 2= Disagree, 1= Strongly Disagree							
Statement	5%	4%	3%	2%	1%		
Key stakeholders participate in identifying, initiating, and planning water projects	38.5	48.4	9.9	2.2	1.1		
Stakeholders' participation is important to the success of water projects	42.9	39.6	14.3	2.2	1.1		
Community involvement in water project is more of a challenge than a benefit	25.3	23.1	25.3	16.5	9.9		
Key stakeholders participate in budgetary allocation meetings	22.0	30.8	20.9	16.5	9.9		
Involvement of key stakeholders has improved community members problem solving skills	36.3	38.5	14.3	9.9	1.1		
Involvement of key stakeholders has improved communities technical capacities	38.5	39.6	11.0	7.7	3.3		

Table 5: Descriptive Analysis of Stakeholders' Involvement



Key: 5= Strongly agree, 4= Agree 3= Neutral, 2= Disagree, 1= Strongly Disagree						
Statement	5 %	4 %	3 %	2 %	1 %	
Community water projects perform better than	22.0	37.4	28.6	9.9	2.2	
other projects						
There is good governance of water projects	27.5	37.7	18.7	8.8	7.7	
The water projects satisfy the needs of	30.8	41.8	14.3	7.7	5.5	
community members						
Community water projects are completed on	26.1	45.7	13.6	10.1	4.5	
time						
Community water projects are completed	23.5	27.7	19.4	20.1	9.3	
within budget						

Table 6: Descriptive Analysis of Performance of Community Water Projects

Inferential Analysis

Effect of Illicit Brew Consumption on the Performance of Water Projects

The first objective of the study was to determine the effect of illicit brew consumption on the performance of water projects in Njoro sub-county. An ANOVA test was used to analyze participants' responses on these two variables. As shown in table 7, the test yielded a P-value of 0.751, which suggest that there is no significant relationship between illicit brew consumption and performance of water projects in Njoro sub-county at the 0.05 level of significance. This finding is not consistent with the study by Birech, Kabiru, Misaro, and Kariuki (2013), who found that chang'aa consumption within the Nandi community, had affected the community's economic activities such as farming and livestock rearing in a negative way. However, the study utilized gualitative techniques in data collection and analysis; hence, the researchers did not test whether the relationship between chang'aa consumption and the community's economic activities was statistically significant.

Kariuki (2010) also found that illicit brew consumption and drug abuse was negatively affecting youth participation in development activities, in Ndumberi location, Kiambu County, by affecting their health, contributing to the youth arrests due to involvement in crime, causing mistrust between the abuser and other community members, and low self-esteem. However, like the previous study, no inferential tests were done to evaluating the significance of the relation between illicit brew consumption, and the youth's involvement in development activities. The current study offer statistical evidence regarding the significance relationship between illicit brew consumption and the performance of community water projects in Njoro sub-county.

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	.402	2	.201	.287	.751
Within Groups	61.598	88	.700		
Total	62.000	90			

Table 7: ANOVA between Illicit Brew Consumption and Performance of Water Projects



Effect of Vandalism on the Performance of Water Projects

The second objective of the study entailed determining the effect of vandalism on the performance of water projects in Njoro sub-county. The ANOVA test yielded a P-value of 0.461, which also suggests that there is no significant relationship between vandalism and the performance of community water projects in Njoro sub-county at the 0.05 level of significance. This finding is contrast with Kooi's (2010) study, which found that vandalism affects the performance of projects by increase project costs through replacement of stolen items or repair of damaged equipment. Ola and Adewale (2011) also found that vandalism water pipelines was the most prevalent form of vandalism in Nigeria and cost governments and communities substantial resources in the repair and replacement of vandalized equipment.

In her study, Muthoni (2011) also found that vandalism of service infrastructure was the largest contributors to inefficiencies and market failures for water supply, electricity, communication, and security services in Nairobi County. However, available evidence suggests that this is not the case in Njoro County. Although the data shows that vandalism is also an issue of concern in Njoro when it comes to water supply, there is no significant link between vandalism and the performance of community water projects in the area.

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	1.801	3	.600	.868	.461
Within Groups	60.199	87	.692		
Total	62.000	90			

Table 8: ANOVA between Vandalism and Performance of Water Projects

Effect of Stakeholder Involvement on the Performance of Water Projects

The third objective aimed at examining the effect of stakeholders' involvement on the performance of water projects in Njoro sub-county. The ANOVA test yielded a P-value of 0.000, which suggests that there is a significant relationship between stakeholders' involvement and the performance of community water projects in Njoro sub-county at the 0.05 level of significance. This finding is consistent with the study of Nkongo (2009), who found that participation of key stakeholders in the planning and execution of the project increased chances of project success by increasing stakeholders' sense of ownership in the project.

The findings also consistent with Narayan (1995), who analyzed lessons from 121 rural water-supply projects funded by different agencies in 49 developing countries and found that the participation of local communities is an important factor for project effectiveness and community empowerment. Muthoni (2011) also identified community involvement in water and other project



as an effective strategy for combating vandalism. She suggested that the main cause of vandalism is the lack of community ownership in the projects that are implemented in their neighborhoods. Ongwon, Kyalo, Mulwa, and Matula (2014) also found that involvement of key stakeholders in water projects promoting continuity by ensuring that community members are equipped with skills and knowledge that enable them to run the projects even after the professional contractors exit the project.

	Sum of Squares	df	Mean Squa	are F	Sig.
Between Groups	14.872	3	4.957	9.151	.000
Within Groups	47.128	87	.542		
Total	62.000	90			

Table 9: ANOVA between Stakeholder Involvement and Performance of Water Projects

Correlation between Study Variables

The Pearson correlation test was also done on the study variables in order to verify the relationship between the variables and determine the direction of these relationships. The correlation test also confirmed the existence of a significant relationship between stakeholders' involvement and the performance of community water projects in Njoro sub-county. The correlation coefficient between the two variables (stakeholders participation and performance of water project) was 0.465, which suggests that the relationship between the two variable is a positive one and of moderate strength.

A positive relationship implies that an increase in stakeholders' involvement leads to an increase in the performance of community water projects. These findings are in harmony with the studies of Nkongo (2009) and Narayan (1995), who also found that stakeholder participation had a significant effect on the performance of community projects. Mwaura and Ngugi (2014) also found that community participation had a significant positive effect on the performance of community based organizations' projects in Kisii County. The correlation test confirmed that there are no significant relationships between the other two independent variables (illicit brew consumption, vandalism) and dependent variables (performance of community water project).

		Illicit brew	Vandalism	Stakeholder Involvement
-	Pearson Correlation	.077	.084	.465**
Performance	Sig. (2-tailed)	.469	.430	.000
	N	91	91	91

Table 10: Correlation between Study Variables

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



Regression Analysis

A multiple regression analysis was done in order to determine the combined effect of all the independent variables (illicit brew consumption, vandalism, and stakeholders' involvement) on the performance of community water projects in Njoro sub-county. The regression model was as follows:

 $Y = \alpha + \beta 1X1 + \beta 2X2 + \beta 3X3 + \varepsilon$

Where.

Y = Performance of community water projects;

 α = constant (coefficient of intercept;

 β 1, β 2, and β 3 = Beta coefficients;

X1=illicit brews; X2= vandalism; X3= stakeholders participation

 ε = Error term

Results on the multiple regression analysis gave an R^2 of 0.217, which indicate that 21.7% of the changes in the performance of water projects in the sub-county can be explained by variation in the independent variables identified in the model (illicit brew consumption, vandalism, and stakeholders' involvement). The remaining 78.3% of the changes in the dependent variable are attributed to other factors that are not in the model. The result suggests that the three independent variables combined are not very good predictors of the performance of community water projects in Njoro sub-county.

Table 11: Model Summary on Combined Effect

Model		R	R Square	Adjusted R Square	Std. Error of the Estimate
1		.466ª	.217	.190	.74711
	 (0				

a. Predictors: (Constant), Stakeholder involvement, Illicit brew consumption, Vandalism

The analysis of variance (ANOVA) in table 12 shows that the three independent variables have a significant effect on the dependent variable. The p-value for the overall model is 0.000, which is less than 0.05. This P-value confirms the model's goodness of fit in terms of explaining variation in the dependent variable.

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	13.439	3	4.480	8.026	.000 ^b
1	Residual	48.561	87	.558		
	Total	62.000	90			

Table 12: ANOVA for Multiple Regression Analysis

a. Dependent Variable: Performance; b. Predictors: (Constant), Stakeholders involvement, Illicit brew consumption, Vandalism



SUMMARY OF FINDINGS

Effect of Illicit Brew Consumption on the Performance of Community Water Projects

The first objective of the study was to examine the effect of illicit brew consumption on the performance of community water projects in Njoro sub-county. Results of the descriptive analysis revealed that illicit brew consumption in Njoro sub-county was on the increase and that this was affecting community members' contributions towards project, as well as, family and community relationships. Participants reported that illicit brew consumption has led to the unavailability of unskilled labor to work in the community project, as well as, affected families' financial position through reduced economic activities and sale of family asset by illicit brew consumers. Contrary to expectations, results of the inferential test showed that there was no significant relationship between illicit brew consumption and the performance of community water projects in Njoro sub-county. This maybe because the communities in the sub-county have learnt how to work around the problem of illicit brew consumption. Maybe community member have found alternative ways of obtaining unskilled labor and for shielding families against financial losses associated with illicit brew consumption. However, these are just speculations; a reliable explanation to this finding can only be obtained through a follow-up qualitative study.

Effect of Vandalism on the Performance of Community Water Projects

The second objective of the study was to determine the effect of vandalism on the performance of community water projects in Njoro sub-county. Descriptive analysis showed that vandalism of water pipes and fitting was a major problem in the sub-county causing interruption of water supply and an increase in repair cost for community members. Participants reported that they experience numerous incidents where water pipes and other fittings are stolen and sold to scrap metal dealers leading to the interruption of water supply. Findings also showed that community members are often compelled to go back to their pockets in order to finance the repair of vandalized water systems. Participants expressed the concern that the county government is not doing enough to combat this problem. However, results of the inferential test showed there was no significant relationship between vandalism and the performance of community water projects in Njoro sub-county, which was also contrary to expectations and findings of most other studies. This may be because the communities in the sub-county have learnt how to work around the problem of vandalism when it comes to execution and management of water projects. This could also be because the problem of vandalism has not reached the extent of discouraging community members from planning and undertaking water projects. A qualitative study is needed in order to explain the relationship between these variables.



Effect of Stakeholders Involvement on the Performance of Community Water Projects

The final objective of the study was to evaluate the effect of stakeholder involvement on the performance of community water projects in Njoro sub-county. Results of the descriptive analysis showed that most of the community water projects in the Sub-county involve key stakeholders in the planning and execution of their projects. Participants reported that key stakeholders such as community members, government agencies, scholars, and project management experts are involved in the planning, budgeting, and execution of water projects in the county. Results also revealed that the involvement of key stakeholders in community water projects has led to empowerment of community members in terms of problem solving skills, knowledge and technical skills for managing projects. In line with expectation and findings of other studies, results of the inferential tests demonstrated that there was a significant relationship between stakeholders' involvement and the performance of community water projects. The correlation test also confirmed that the relationship between stakeholders' involvement and performance is positive and of moderate strength. This implies that if you increase stakeholders' participation, the performance of community water projects will also increase.

CONCLUSION

Findings have led to the conclusion that, among the three independent variables that were under investigation, stakeholder involvement is the factor that has the most significant effect on the performance of community water projects in Njoro sub-county. The data has shown that increased involvement of key stakeholders in the community water projects lead to better performance of the projects. It also shows that stakeholders' participation adds value to community water project by enhancing the projects budgeting processes, improving community members problem solving skills, as well as increasing community members' knowledge and technical skills in managing projects. Although available data show that illicit brew consumption and vandalism are serious problems in Njoro sub-county, results of inferential tests did not support the existence of a significant relationship between these two independent variables (illicit brew consumption and vandalism) and the performance of community water projects in Njoro sub-county. The study, therefore, concludes that illicit brew consumption and vandalism have no significant effect on the performance of community water projects in Njoro sub-county. The regression test showed that, when combined, the three independent variables have a significant effect on the performance of community water project. However, the regression model could only explain 21.7% of the changes in the performance of community water projects,



which imply that there are other factors that have a more significant impact on the performance of water project in the area than the three variables that were being studied.

RECOMMENDATIONS

The findings of the study have a major implication on community projects in Njoro sub-county and other parts of the country. They suggest that community projects should increase the involvement of key stakeholders such as relevant government agencies, financial advisers, and other professionals in order to enhance the success of their projects. The study has shown that involving such stakeholders add value to the project by enhancing community members' skills and competencies in managing projects. Policy makers in various areas such as the ministry of water and county administration should also consider pursuing policies that will promote the active involvement of key stakeholders in community projects.

The findings also have an implication on project management as a discipline. The study has shown that there is a strong link between stakeholders' involvement and the performance of project. Project management education theories should emphasize the importance of stakeholders' involvement in the management of projects especially in the community settings. Education curriculums in the project management discipline should also focus on imparting skills and attitudes that will enable students to facilitate stakeholders' participation in projects once these students start practicing the profession.

RECOMMENDATIONS FOR FURTHER STUDIES

The findings also have some implication on further studies. The current study was limited to water projects in Njoro sub-county. Future studies should consider replicating the same study in other areas in order to support the generalization of these findings. The study was also limited to three factors: illicit brew consumption, vandalism, and stakeholders' involvement. In future studies, researchers should also consider exploring other variables that may affect the performance of community projects such as skills and competencies, technology, and political interference.

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