

Community Participation and Water Payment Compliance: A Case Study of Kitgum Town - Uganda

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Abstract: In this article, we examined the influence of community participation in planning, pricing and monitoring of water services on compliance to payment for water services taking Kit gum Town as a case study area. Using interviews and focus group discussions, we assessed 54 members of the Business Community Association and other political representatives in Kit gum on their level of participation in water service provision and compliance to payment for water. Frequency analyses were used to explore the extent of community participation in planning, pricing and monitoring of water services in Kit gum. Linear regression on the hand, were used to establish the influence of community participation in planning, pricing and monitoring of water services on compliance to payment for these services. Findings in the multiple regression summary revealed a positive relationship with the overall correlation (linear relationship) between compliance to payment (dependent variable) and community participation being $r=0.56$, which is consistent with recent research on community participation in water services, such as Magma (2013). The researchers therefore recommended that community participation should be expanded to include most of the sections of the community with programs to empower the community on effective participation and engagement techniques, and written effective distributed guidelines. Secondly, the need for regular community meetings on the water services and use of a far-reaching forum to communicate on meter prices, changes in water tariffs, and monitoring tools is paramount.

Keywords: Community Participation, Water Services Planning, Pricing for Water Services, Water Services Monitoring and Water Payment Compliance.

1. BACKGROUND TO THE STUDY

Access to water is a prerequisite to improved health, livelihoods and overall well-being of men, women and children, particularly among the poor (Asaba et al., 2014). Good governance is essential in increasing access to and quality of water, combined with citizen empowerment in the planning, budgeting and monitoring of water and sanitation service delivery (Mwebaza, 2010), and the most persistent obstacles for the sustainable management of water resources lie in the realm of water governance (Pahl-Wostl et al., 2012). These persistent obstacles are largely our own making. They have resulted not from the natural limitations of the water supply or lack of financing and appropriate technologies, even though these are important factors, but rather from profound failures in water governance. Crow & Sultana (2002) are quoted by the Mathenge, et al. (2014) demonstrating that community ability to effectively manage its water resources and enable easy access to water services is being compromised by men and women, who misuse water and land resources, finances, industries and other firms as well as their own governance.

Calls for increased participation in decision-making have gathered momentum in the past few decades, spawning a wealth of theoretical and practical literature and influencing approaches to policy-making by various levels of government (Richards et al., 2007). Participatory policy making implies the empowerment of stakeholders to take part in the whole cycle of the policy process: formulation, implementation, monitoring and evaluation of policy (McGee & Loomis, 2008). In this case community participation would imply involving the community at planning, pricing and monitoring of water services. Recent thinking about citizen participation looks at the concept of participation from a perspective that acknowledges the possibility of citizens taking autonomous action and creating their own opportunities for participation. This study examined the effect of community participation on compliance to payment for water services. While it is possible to participate passively, this study focused on direct participation by communities.

1.1 Problem Statement:

Whereas community participation is widely advocated for, there seems to be no involvement of the community in the planning, pricing and monitoring of water services in Kit gum Town and yet they have the ability to pay for these services. This was evidenced by the complaint from the business community association to the Resident District Commissioner on the 15th of May 2014, complaining of failure of NWSC to involve them in setting the tariff policy (Minute book, 15th May, 2014). We were concerned by this complain to examine the influence of community participation in planning, pricing and monitoring of water services on the compliance to payment for water services taking Kitgum Town as a case study area.

1.2 Purpose of the study:

The study intended to examine the effect of community participation and water payment compliance taking a case study of Kitgum town

1.3 Objectives of the Study:

The specific of the study were:

- i. To determine the effect of community participation in water services planning on water payment compliance.
- ii. To establish the effect of community involvement in pricing for water services on the water payment compliance.
- iii. To examine the effect of community participation in water services monitoring on the water payment compliance.

2. LITERATURE REVIEW

2.1 Conceptual review:

Here the researchers reviewed the variables in relation to the specific objectives. The researchers first reviewed community participation in water services planning on compliance to payment for water services, then reviews community participation in water services pricing on compliance to payment for water services, and lastly, reviewed community participation in water services monitoring on compliance to payment for water services.

2.2 Community Participation in Water Services Planning and Compliance to Payment for Water Services:

Decisions that are based on mutual understanding and an agreed way forward are more likely to last than those based on a 'win-lose' trade-off (Richards et al., 2007). Individuals come into contact with the planning system rarely, unless they are already connected to it in some way, for example by being a member of a local group that comments on application proposals. This means that the level of knowledge about the planning system and the development process as a whole is limited. Local users of water resources often have no access to information concerning water planning and no right to participate in decision-making processes affecting those waters (Razzaque, 2009) yet regular communication provides an opportunity to connect, raise awareness, and educate customers about ongoing issues relating to water delivery, availability, quality, and regulation. Payments do not follow the market format as intermediaries frequently are setting the price, with users unaware even of the fact that they pay (Arild, 2009).

The communication between the water supply company and its customers seems to be just one way customers knocking at the door of the company reporting their problems, little communication flows from the company to the clients in order to communicate important messages for report on the problems that concern customers (Institute for Contemporary

Studies (ICS), 2012). And yet, by encouraging wider participation in the process, the benefits are direct and measurable. In most cases, utilities in smaller communities will find it beneficial to pursue active engagement with the community, with community planning institutions, or with stakeholders. Aligning utility planning with existing community plans if community plans already exist, may not involve active utility participation in community planning itself, but rather a strategic decision to incorporate community goals into the utility's own planning efforts. For example, the City of Portland, Oregon Water Bureau aligned with Portland's Climate Action Plan by setting specific objectives in its Strategic Plan to reduce carbon emissions (EPA, 2012). Even smaller communities will occasionally need to garner community support for critical decisions. Community-wide planning has multiple benefits in this context (EPA, 2012).

Allowing multiple stakeholders to define the problem may help ensure a fairer outcome that takes account of different values and needs (Richards et al., 2007) making people's participation essential for sustainable development. Sustainable services are not achieved without involvement of other stakeholders and particularly water users in the development of the policies and laws for sector development (Jacobson et al., 2010). Practitioners and scholars widely cite the essential role that participatory planning plays in engendering a sense of ownership for the water system among community members (Robb, 2002), which in turn ensures users' commitment to long term operation and maintenance (Whittington et al., 2009). Involving the community in planning the revenue avenue could improve on customers' sense of ownership, and consequently lead to willingness to pay, although despite broad acceptance of the idea that "sense of ownership" among users is critical to infrastructure sustainability in developing countries, little is known about what sense of ownership is, or its drivers. Effective participation is likely to lead to greater acceptance of the decisions taken (Mostert, 2003, p180 quoted by Gooch & Stalnacke, 2010). The key for many developers is that meaningful participation can result in speedier decisions and a more sustainable development. The participation process enables the development to evolve to become a scheme with local support and if people have been actively involved in the process, they are more likely to care about the end result and look after it when it is built (NCC, 2010).

The value a water user attaches to water can be estimated in terms of individual willingness to pay (WTP). However, this estimate may be misleading in situations where consumers are not willing to pay for the expectations and perception that it is the government's responsibility to provide them with safe water at a free cost. The attitude that water is a free gift of God still persists in Uganda, and not all consumers pay their water bill in a timely manner. The willingness to pay for a competing product is estimated as the price at which the respondent would switch away from the status quo product. With this set of assumptions, willingness to pay cannot be estimated for customers who would actually not buy the status quo product in the first place or have a different (unknown) status quo product (Bredert, Hahsler, & Reutterer, 2006). Consumers will use water so long as the benefits from the use of an additional cubic meter exceed the costs so incurred (Vilcara & Karina, 2009). However, like any other good, water has optimal consumption and can lead to deadweight losses if there is a price increase leading to a reduction in consumption. There are different mechanisms by which tariffs can be collected. The most common systems according to Harvey, 2007 as cited by Vilcara & Karina, (2009) are: (1) Reactive financing; when a system fails or breaks down the community or better-off households club together to pay for repair; (2) Monthly tariffs; whereby each household (or adult) in the community is expected to contribute a given amount each month, and lastly, (3) Pay-as-you-fetch; require a caretaker to be present at the facility at all times (except when it is locked) to collect water tariffs from the community. Users pay a fixed amount per container which is filled by the caretaker.

A water tariff is the unit price charged per unit volume of water. Water tariff determine the level of revenue that service providers receive from the users. But implementation of water tariff does run into problems of unclear responsibilities, poor collection rates, and institutional capacities (Zhong & Mol, 2010). As water is a scarce resource, pricing is increasingly seen as an adequate instrument of public policy (Vilcara & Karina, 2009). Pricing water to recover its full cost, including the costs of building, operating, and maintaining a water system, is essential to long-term sustainability. Setting water tariffs is an important function for a water utility, as water pricing may be used to achieve several objectives. The primary goal in designing rates is to ensure that the utility recovers the appropriate amount of revenue from each customer class. The practical challenges associated with setting water prices remain significant and prices that approach cost are often the exception rather than the rule (Pawsey & Crase, 2013). Rates for general water service include a fixed charge based on the size of the meter and a volumetric charge based on the amount of water used. There are endless combinations of fixed and variable charges that are capable of generating the revenues needed. As a result, rate designs often reflect other policy preferences, such as promoting water conservation, simplifying billing practices, or

maintaining equity among customer classes. Water is treated as a free resource and no charge is imposed for withdrawing it from a water source. Users pay for the transport of water from its source to its place of use and perhaps for treatment of the water and disposal of the return flows (Vilcara & Karina, 2009). Knowing how to set the proper rate for water service is a daunting challenge for small water systems. The rates must be high enough to recover the full cost of providing water. But if rates are too high customers will be irate, especially if they believe the rates are not set up in a fair manner (Gene et al., 2007).

2.3 Community Involvement in Water Services Pricing and Compliance to Payment for Water Services:

Participatory pricing is a process of democratic policy-making in which the government invites citizen inputs during the process of setting the tariff and allows their influence in cost allocations (Zhang & Yang, 2009). Participatory pricing has drawn significant attention from public administration practitioners and scholars in recent years. Yang & Callahan (2007) found that 46.2% of the respondents reported that their cities involved citizens or citizen activists in the pricing function. However, evidence is inconclusive as to why some local governments include citizen participation in the budget process while others do not. But while everyone, from the poorest to the wealthiest, is affected by the tariff, few people fully understand its significance, and even fewer have the opportunity and skills to influence and improve it. This is especially the case for poor people; whose voice is most often lost in the budget process, and yet are most seriously affected by weak public institutions and infrastructure (WaterAid, 2010).

Yang and Callahan (2007) further commented that meaningful, authentic participation is rarely found, as many public officials are reluctant to include citizens in decision making, or if they do, they typically involve citizens after the issues have been framed and decisions have been made. Building customer and community appreciation of infrastructure investment value is likely to require proactive, ongoing stakeholder education and involvement. For example, changes to utility rates and fees typically require the approval of a governing body (e.g., utility board, municipal or county council) and can be difficult in the absence of reasonable customer support (EPA, 2012). Alkadry (2003), cited by Zhang and Yang, (2009), contended that professional administrators become indifferent to citizen needs because of their bureaucratic personality. That is, their responsiveness to citizens is constrained by their inability to take action or their unwillingness to take action given that they are constantly watched by their supervisors and governed by strict rules and job descriptions. City managers' personality and behaviors are shaped by their professional experience in a way that their tendency toward citizen participation in the budget process is constrained by their inability and their unwillingness to involve citizens. Many exemplary managers, facing significant challenges, have creatively and successfully involved citizens in solving community problems. Therefore, it stands to reason that favorable attitudes toward citizen participation may positively affect administrative decisions to include citizens in administrative processes (Yang & Callahan, 2007). However, this argument has not been empirically tested.

The dimension of water as an economic good leads to an economic pricing of water that may affect the interests of the poor population. Tariffs are applied as an economic instrument to help achieving the social and economic equilibrium (Vilcara & Karina, 2009). Some important characteristics of the water tariffs include; the consistency with the needs and objectives of the community (Boland, 1997) cited by Vilcara & Karina, (2009). While consumers like high quality water at an affordable and stable price, suppliers like to cover all costs and have a stable revenue base. The "best" tariff design for a particular community and situation is one which strikes the most desirable balance among the objectives that are important to that community (Boland, 1997). One key objective could be using the tariff to allocate social benefits through equitable distribution of revenues collected from different income groups in line with their affordability-to-pay (Kayaga & Motoma, 2009). From the perspective of CSOs engaging in budget advocacy, it is important to consider two main groups of stakeholders: those who already have a considerable influence in how the budget is planned and implemented, and those who lack a voice, but are most affected by the budget. But budget advocacy is not just about identifying and reaching the individuals and institutions which already have say in the budget. In particular, poor and marginalized people who traditionally lack a say in the budget are perhaps the most important 'stakeholders' (WaterAid, 2010).

Water tariff structure encompasses the categorization of clients, the charge per each category, and the ability of the customers to meet these charges (Vilcara & Karina, 2009). Often there is lack of empirical data about how the applications of different tariff structures affect water use for different customer classes (USSWM, 2010). Typically, water utilities choose among three types of pricing schemes (Uniform, decreasing and increasing block rates), or some

combination of these, to influence water use. A key policy question in designing urban water policy and institutional reforms is: what should be the appropriate structure of water charges to ensure long-term sustainability of water service? The following structures can be considered depending on their operationability: (1) Fixed Charge Tariff (also known as Single Tariff or Flat rate tariff) where consumers pay a certain amount independent of the volume used. Sometimes there are different tariffs based on different types of users (industry, agriculture, etc.), property values or pipes diameters. In some places of India, a flat rate is charged in respect to the number of bedrooms one has; (2) Constant Volumetric Tariff (also known as uniform volumetric tariff) where all users pay the same per unit of water used, independently of use (e.g. industry, commerce or household etc.); and lastly (3), Increasing Block Tariff (IBT) where users pay different amounts for different consumption levels. The rate per unit of water increases as the volume of consumption increases. The model came up with an increasing block tariff that provided higher rates for the second and third blocks of consumption, in order to encourage water conservation (Kayaga & Motoma, 2009), among others.

2.4 Community Participation in Water Services Monitoring and Compliance to Payment for Water Services:

Monitoring and Evaluation (M&E) have long been important to assess actual change against stated objectives to judge whether development assistance has been successful or not (Beheim et al., 2010). Different organization increasingly realized that there is need for monitoring with a wide range of stakeholders, thus making monitoring and evaluation more participatory. Participatory water monitoring has an important role to play in reducing or avoiding water-related conflict in large-scale (CAO, 2008). Participatory Monitoring and Evaluation involves the assessment of change through processes that involve many people or groups, each of whom is affecting or affected by the impacts being assessed (Beheim et al., 2010). Through the collection of data that is credible to multiple parties, participatory monitoring can become an essential instrument for generating trust (Atkins & Wildau, 2008) which might yield into higher willingness to pay. From local to global levels, civil society stakeholders and private sector must be heard and responded to in meaningful dialogues with government agencies (Richards, et al., 2007). By enhancing citizens' information and creating mechanisms for participatory monitoring and citizen-state dialogue and negotiation, social accountability mechanisms can contribute to better policy, program design, more development resources, more equitable and efficient public spending and greater and more sustainable development outcomes (McNeil, 2010). By giving stakeholders input, directly addressing their concerns, and fostering participation, participatory monitoring helps generate a sense of ownership and responsibility, thereby increasing social capital and diffusing possible sources of conflict (CAO, 2008).

A transparent process in which conflicting claims and views are considered can increase public trust in the final outcome (McNeil, 2010). This not only enhances the effective implementation of the outcome but also has broader implications for building an active civil society. The collapse of a process is often attributed to top-down implementation, e.g. not allowing enough time to build a consensus (Richards et al., 2007). Evidence, much of it from the developing world, suggests that locally based, locally owned decisions are often the most effective in the long term (Richards et al., 2007) although the success of participatory processes is influenced by the role of the facilitator or project manager. Many projects attribute their successes to the skills of the person in this role, rather than to the particular methods used. For water monitoring to be truly participatory and to achieve its purpose, the program must have an effective and appropriate means of engaging citizens. Exactly how public participation is incorporated into a monitoring program depends on the objectives and interests of the company and community, the resources available, and the collective vision of what participation means (CAO, 2008). They help communicate problems on the ground and broadcast local plans and news to communities. But monitoring programs need to be done right. In many instances, companies have spent large amounts of money on monitoring programs that may have a high degree of technical credibility, yet generate little trust in the community. One reason for this is that most monitoring programs are top-down, with the public receiving information that has been collected, analyzed, and reported by experts chosen by the project sponsor or company, and presented in a way that the public may not understand (CAO, 2008). In many instances, the information may not even address the real concerns of the community; rather, it may be strictly oriented toward a company's interests in compliance with regulations and legal commitments. Sometimes, communities become aware of monitoring results so late in the project cycle that they may have lost trust in the company before they receive the results.

A review of a large amount of case studies showed that Payments for Environmental Services in practice depends rather fundamentally on state and/or community engagement (Arild, 2009). As by many researchers attributes like voting, non-institutionalized political activity remains tied to social-economic status. The benefits of public participation are often taken for granted, and partly for this reason the underlying rationale for greater public participation is sometimes poorly

articulated, making it more difficult to determine how to pursue it effectively (O'Faircheallaigh, 2010) and yet it is worth noting that public managers may respond to the barriers proactively rather than passively. In that case, the structures present in water tariff policy formulation process greatly favor the elites, politicians and the rich who in exchange greatly contribute to the economic development. Robb (2002) in her study "Can the Poor Influence Policy" showed how participatory methods and approaches can enable poor people to analyze their situations and express their priorities and how these can fundamentally differ from those assumed by policy makers. Small rate increases implemented over a number of years may be more acceptable to customers than infrequent, large rate increases (EPA, 2012).

3. METHODOLOGY

3.1 Research Design:

A case study design was used in this study to emphasize detailed contextual analysis of the limited number of conditions that influence compliance to payment for water service and its relationship with community participation. Soy (1997) pronounces researcher Robert K. Yin's (1984) definition of a case study research method as an empirical inquiry that investigates a contemporary phenomenon within its real-life context; when the boundaries between phenomenon and context are not clearly evident; and in which multiple sources of evidence are used. The research was a single in depth analysis into community participation on compliance to payment for water services. Both quantitative and qualitative data were collected and used. Quantitative data was particularly used to discover how communities participate in planning, pricing and monitoring of water services, while qualitative data was used to find out why community participation affects the compliance to payment for water services.

3.2 Study Population, Sample Size and Sampling Technique:

The NPHC Report (2014) indicated a population of 44,604 persons in Kit gum Town Council with 2,041 persons living in the town parish area. This made the study population of the survey. Of these, 2,041 people were in Town Parish Area were members of the Business Community Association subjected to this study are found. Other respondents were purposively selected because they were knowledgeable on community participation and the respective positions they held. The Business Community Association was selected most especially due to the fact that they had expressed their interest for involvement in water service provision. A sample size of 65 respondents was therefore used basing on Crecy and Morgan 1970) formula, given as; $s = X^2NP(1 - P) \div d^2(N - 1) + X^2P(1 - P)$ Whereby: $s =$ required sample size, $X^2 =$ the table value of chi-square for 1 degree of freedom at the confidence level (3.841), $N =$ Size of population, $P =$ the population proportion (assumed to be .50 since this would be provide the maximum sample size), and lastly, $d =$ the degree of accuracy expressed as a proportion (.05).

TABLE A: Study Population, Sample Size and Data Collection Methods per Category

Category of Respondents	Population	Sample Size	Data Collection Methods
Members of Business Community Association.	63	56	Questionnaires
Top management of NWSC Kitgum Area	2	2	Semi-structured interview
Political leadership (Local Chairperson III)	1	1	Semi-structured interview
Executive Council members LCIII	5	5	Focused Group Discussions
Resident District Commissioner	1	1	Semi-structured interview
Total	72	65	

Source: Primary Data (2015) sampled using the Krejcie and Morgan's (1970) formula for determining sample sizes.

Table A further shows that purposive sampling was used in selecting key informants for individuals holding specific offices, and those that were knowledgeable about community participation and water services. Strata were also formed to give an equal chance to the different categories to take part in the study. The selection of the respondents from each stratum was by systematic sampling as prescribed by Kothari (2007). According to Kothari, sampling of human population with a random stratum was expected to yield small gains over random sampling possibly from 2 to 10 percent smaller variance than the results of a sample of the same size selected entirely at random from whole universe. These

individuals were grouped into strata categorized according to levels of involvement in water service provision. The grouping of respondents in strata directed the use of stratified sampling.

3.3 Data Collection Methods and Procedures:

Data was collected using interviewing and questionnaire as the key data collection methods. Different methods were applied depending on which strata at hand. This was because of the difference in the level of involvement among the strata. *Interviews for examples* were used to gather respondents' oral opinion or expressions, while *Questionnaires* were administered to the members of the business community given their many numbers. Both questionnaires and interview guides used were structured in order to capture both qualitative and quantitative data sets. Lastly, *Focus group discussions were held* with 4 councilors at LCIII Kitgum Town Council. This was because of the need to stimulate group thinking among members as emphasized by Krueger & Casey (2009). For the collection of secondary data, a *Documentary review given the fact that* Secondary data was necessary to inform the researchers' on the previous scholarly views about community participation and compliance to payment for water services so that the researchers could form a basis for comparison and data verification as emphasized by Kothari (2007). A collection of relevant reports, and documentaries from the Ministry of Water and Environment, the internet, NWSC and other water sector players was paramount to enrich the study.

3.4 Validating of Research Instruments:

The researchers first ascertained whether data collection instruments had the necessary validity before they were used. This was done by establishing whether instruments measured what the study intended to measure (Mugenda & Mugenda, 2003). Content validity of the instruments was measured. Kothari (2007) affirm that respondents are more likely to honestly complete and return questionnaires they perceive as having relevant content. To measure content validity, instruments were subjected to different experts to evaluate whether the instruments had the content they intended to measure. As recommended by Amin (2005) items which were found to be ambiguous and those judged inappropriate were either eliminated or adjusted. In the content validity test, the validity of each item were evaluated on a scale for which 1 = relevant, 2 = quite relevant 3 = somehow relevant and 4 = not relevant. The validity of the instrument was tested using the Content Validity Index (CVI). The CVI was measured using the formula: Content Validity Index (CVI) = K/N, Where K was total number of items rated relevant and N, total number of items in the questionnaires. The findings are shown in the table B below.

TABLE B: Content Validity Index (CVI) of Instruments

Expert	Content validity index	
	Questionnaire	Interview guide
Supervisor 1	0.81	0.82
Supervisor 2	0.83	0.78
Average	0.82	0.80

Source: Pilot Data (2015)

As indicated in Table B, all CVIs for the two instruments were above 0.80, indicating that the items in the instruments actually measured the study variables. On average, the content validity index for the questionnaire was 0.82, while that of the interview guide was 0.81. These values were in agreement with Mugenda & Mugenda (2003), who recommended that for an instrument to be valid for research purposes, its content validity index has to be 0.8 and above. The researchers also ensured that all items in the instruments had face validity and the wording used in instruments were simple, clear and related to the research problem.

3.5 Reliability of Research Instruments:

When an instrument is reliable, it yields consistent responses because it is interpreted well. If the desired variable is not measured reliably, the information obtained would not be correct and therefore not be valid. Pilot data was collected from 20 respondents and used to measure and enhance the reliability of the questionnaire. Data was then collected and entered in the Statistical Package for Social Sciences (SPSS) version 20. A Cronbach alpha coefficient test of reliability was calculated using the formula below:

$$\alpha = \frac{K}{K-1} \left(1 - \frac{\sum_{i=1}^K \sigma_{Y_i}^2}{\sigma_X^2} \right)$$

Whereby, σ_X^2 was the variance of the observed total item scores, and $\sigma_{Y_i}^2$ was the variance of component i for the pilot sample. The reliability test findings are presented in table C below.

TABLE C: Shows Reliability of Research Instrument

Variable	Alpha coefficient
Participation in Planning	0.723
Participation in Pricing	0.895
Participation in Monitoring	0.712
Compliance to Payment	0.761
Average	0.773

Source: Pilot Data (2015)

Findings in table C above revealed that the alpha coefficients of the sub variables making the independent variable community participation were; participation in planning = 0.724, participation in pricing = 0.895 and participation in monitoring = 0.712. The alpha coefficient for the dependent variable, compliance to payment was 0.761. All Cronbach alpha coefficients were above 0.70 which indicated that the questionnaire was reliable enough to be used as a research instrument (Amin, 2005).

3.6 Data Analysis and Presentation:

The study aimed at examining the influence of community participation in planning, pricing and monitoring and its influence on compliance to payment of water services. In respect to this, frequency analysis was first used to explore the extent to which the community participates in planning, pricing and monitoring of water services. Given the random sample of observation, the population regression line was estimated by; $Y = b_0 + b_1X$; Whereby, Y=Dependent Variable, X=Explanatory Variable (independent Variable), b_1 = Slope of gradient (regression Coefficient), b_0 = intercept (value of Y when X is Zero)(constant), and the from the linear Equation below:

$$b_1 = \frac{\sum [(X_i - \bar{X})(Y_i - \bar{Y})]}{\sum [(X_i - \bar{X})^2]}$$

$$b_1 = r * \left(\frac{S_y}{S_x} \right)$$

$$b_0 = \bar{Y} - b_1 * \bar{X}$$

From the equation above, b_0 is the constant in the regression equation, b_1 is the regression coefficient, r is the correlation between X and Y, X_i is the X value of observation i , Y_i is the Y value of observation i , \bar{X} is the mean of X, \bar{Y} is the mean of Y, S_y = Standard deviation of Y, and lastly, S_x = Standard deviation of X. In this regard, the linear regression was used to establish the influence of community participation in planning, pricing and monitoring of water services on compliance to payment for water services. Linear regression was used because it focuses on the conditional probability distribution of one variable given another variable. Data was modeled using linear predictor functions to estimate unknown model parameters. According to Kothari (2007), simple regression analysis is used to find the “best” fit that a straight line of this kind can give.

The actual analysis involved both qualitative and quantitative techniques. Small scale in-depth qualitative interviewing of key informants and logical analysis were used for qualitative data analysis supported by descriptive statistics, mainly frequencies, means and cross-tabulations. The data collected from the questionnaires enabled the development of a database in Statistical Package for Social Science (SPSS) and MS Excel spreadsheets. The findings are reported using carefully titled and well labeled tables and figure for quantitative data, while narrations were used to present qualitative information. Data pre-processing was done by activating Data View and Variable View spreadsheets in the Statistical Package for Social Science (SPSS) and data input in MS Excel spreadsheets. This was followed by the coding of information and data entry into files. Once finished, data outliers, mistakes and errors were checked, identified and

cleaned. Finally, the assessment of the overall quality of the dataset concluded the exercise to enable quantitative data analysis.

4. DATA PRESENTATION AND ANALYSIS

In this section, we present the findings of the study on the levels of Community Participation in water services planning, pricing, and monitoring, as follows:

4.1 Community Participation in Waters Services Planning and Compliance to Water Services Payment:

The first objective of the study was to determine the effect of community participation in planning on compliance to payment of water services. Frequency analysis was first used to explore the extent to which the community participates in the planning for water services. Participation in planning was explored using items such as participation in general planning, setting tariffs, budgeting for services and information dissemination on costs for water services. The findings are shown in the table D below.

TABLE D: Shows Frequencies, Percentages, Means and Ratings on Community Participation in Waters Services Planning

Participation in planning		SA	A	N	D	SD	Mean	SD	Overall rating
I participate in the general water services planning	f	0	1	19	29	5	1.4	1.9	Disagree
	%	0	1.9	35.2	53.7	9.3			
I participate in planning for water services tariffs	f	4	3	9	9	29	1.6	1.8	Disagree
	%	7.4	5.6	16.7	16.7	53.7			
My leaders represent me when NWSC is pricing for water services	f	21	19	1	9	4	3.2	2.9	Agree
	%	39.9	35.2	1.9	16.7	7.4			
I am well informed on how the current costs of waters services were arrived at	f	1	2	2	34	15	1.7	1.5	Disagree
	%	1.9	3.7	3.7	63.0	27.8			

Source: *Primary Data (2015)*

The findings in the table D above show that with regard to community participating in the general water services planning, the majority of the respondents disagreed (53.7%) and 35.2% were not sure and 9.3% strongly disagreed. As far as community participation in planning for water services tariffs is concerned, 53.7% strongly disagreed that they participated, followed by 16.7% who disagreed and by another 16.7% who were not sure. In relation to leaders representing them when NWSC is pricing for water services, 39.9% strongly agreed and 35.2% agreed. With regard to being well informed on how the current costs of water services were arrived at, the majority 63.0% disagreed and 27.8% strongly disagreed and 3.7% were not sure. Findings show that generally there is low community participation in planning for water services given the fact that respondents disagreed to participating in general planning, planning for water tariffs and knowing how tariffs were arrived at. Using logical analysis by the researchers, it is analyzed that this low participation in planning especially in the area of tariffs and budgeting was likely to reduce community's understanding of the origin of the prices they pay for water. It was also likely to lead to mistrusts of the billing system.

The views of key informants were also explored on this issue in a Focused Discussion Group and individual in-depth interviews with the commercial officer. Key informants indicated that there is some community representation in the planning of water services, it was not engaging enough. The local water services committee was operational and had some representatives from the community, such as businessmen, and a few local leaders. However, key informants complained that participation is not very inclusive and many times does not achieve its intended purpose. The Commercial and Billing officer for NWSC-Kitgum said that "*representation is rather limited to LCs and Business representatives, who "are not able to fully present the needs of the community"*". The Councilor for People with disabilities complained that there is a very big communication gap between the technocrats of NWSC and the community. He explained "*In water services meetings, the technocrats withhold certain information and use technical language that is difficult to understand by the community representatives"*". As a result community participation is just perfunctory since they do not make significant contributions due to lack of pertinent information. Another council representative also complained that in most cases, the

community is not aware of what is going on since “obligations of the councilors are overlooked making it very difficult to holding the service providers accountable”. These findings from the key informants show that community participation in planning is not engaging enough and it is used just as rubber stamp by NWSC for sanctioning their policies.

Liner regression was done to establish the influence of community participation in waters services planning on compliance to payment for services. Scores on community participation in planning were regressed on scores on compliance to payment for water services. The findings are shown in the table E below.

TABLE E: Shows a Regression Analysis on Community Participation in Planning against Compliance to Payment

R	R square	Adjusted R square	B	Beta	Sig.
0.54*	.291	.282	1.020	.54	.03

Source: Primary Data (2015)

From table E above, value significance is at 0.05 level (2-tailed), while Predictor variable is presented as ‘Participation in Planning, and the Dependent variable as ‘Compliance to Waters Services Payment’. The regression model further indicates that correlation between participation in Planning and compliance to waters services payment is $r = 0.54$. This implies that, generally, community participation in planning for waters services is moderately and positively related to community compliance to payment for the services. The relationship was significant at $p\text{-value} < 0.05$. This means that the more opportunities for participation in waters services planning given to the community the higher their intention to pay for the services. The results of the regression model indicated an adjusted R-square of 28.2%. This implies that on average, community participation can cause a 28.2% increase in the compliance to payment by the community. This implies community participation in the general planning of waters services facilities community ownership and understanding of the costs for the services. This subsequently leads to higher compliance to payments by the community.

4.2 Community Participation in Waters Pricing Services & Compliance to Water Services Payment:

As the second objective of the study, this determined the effect of community participation in water services pricing on compliance to payment of water services. Frequency analysis was first used to explore the extent to which the community participates in pricing waters services. This issue was explored using items such as involvement in costing, setting tariffs, and trust in tariff setting process. The findings are presented in table F below.

TABLE F: Shows Frequencies, Percentages, Means and Ratings on Community Participation in Water Pricing Services

Participation in Planning		SA	A	N	D	SD	Mean	SD	Overall Rating
I take part in costing water services	F	0	12	4	16	22	1.5	1.2	Disagree
	%	0	22.2	7.4	29.6	40.7			
I made an input in the current tariffs of water services	F	0	14	2	20	18	1.3	1.0	Disagree
	%	0	25.9	3.7	37.0	33.3			
I trust the water company costing process	F	0	1	19	29	5	1.1	1.6	Disagree
	%	0	1.9	35.2	53.7	9.3			
The community always participates in setting water services tariffs	F	4	3	9	9	29	1.2	1.9	Disagree
	%	7.4	5.6	16.7	16.7	53.7			

Source: Primary Data (2015)

Findings in table F above show that majority of respondents disagreed (40.7%) and 29.6% strongly disagreed that they take part in costing water services. As far as making an input in the current tariffs of water services in concerned, 37.0% disagreed and 33.3% strongly disagreed. With regard to trusting the water company costing process, the majority (53.7%) disagreed and 35.2% were not sure. In relation to community always participating in setting water services tariffs, the majority, 53.7% strongly disagreed, 16.7% disagreed and 16.7% were not sure. These findings point to very low community participation in pricing water services, which is likely to cause defaults in payments for the services.

The views of key informants were also explored on this issue in a Focused Discussion Group and individual in-depth interviews with the commercial officer. The findings from the key informants indicate no community involvement in the

pricing of water services, confirming the above findings. In fact there was lot of complaints about the accuracy of pricing and billing by the community. The Chairperson, Water and Sanitation committee Kitgum Town Council said that “customers are only sent water bills and they do not know how it is arrived at”. She added that “majority of customers feel that NWSC is cheating them, meters are not accurately read”. This has resulted into low compliance to payment of bills. Very few pay their bills promptly or in advance, though they have the ability to pay. The community feels that transparency in pricing and billing is nonexistent. This is the reason why some people only pay after being disconnected. Another councilor intimated that some people even “decide to stop getting water from NWSC”. This happens due to “lack of clarity in their bill calculation”. Because of minimal involvement, some community members feel that since water is acquired free by NWSC, it should also be supplied free or at a very minimal cost.

Liner regression was done to establish the influence of community participation in waters services pricing on their compliance to payment for the services. Scores on community participation in waters services pricing were regressed with scores on compliance to water services payment. The findings are shown in table G below.

TABLE G: Showing Regression Results of Participation in Pricing against Compliance to Payment for Water Services

R	R square	Adjusted R square	B	Beta	Sig.
0.46*	.17	.16	0.96	.046	.02

Source: Primary Data (2015)

From table G above, value significance is at 0.05 level (2-tailed), while Predictor variable is presented as ‘Participation in Pricing, and the Dependent variable as ‘Compliance to Waters Services Payment’. The regression result in table 12 above show that the correlation between community participation in waters services pricing and compliance to water services payment is $r = 0.46$. The relationship was significant at $p\text{-value} < 0.05$. This implies that, community participation in pricing is positively related to compliance payment for the services. The results of the regression model indicated an adjusted R-square of 16%. This implies that on average, community participation will lead to about 16% increasing in compliance to payment. This is because community participation in pricing enables them to understanding the origin of the price they pay. They are more trusting of the billing and also appreciate the role of their payments in sustaining quality water services.

4.3 Community Participation in Waters Services Monitoring and Compliance to Water Services Payment:

The third objective of the study was to determine the effect of community participation in water services monitoring on compliance to payment of water services. Frequency analysis was first used to explore the extent to which the community participates in monitoring waters services. This issue was explored using items such as monitoring budget implementation, revenue collection and quality of water services. The findings are shown in table H below.

TABLE H: Frequencies, Percentages, Means and Ratings on Community Participation in Waters Services Monitoring

Participation in Planning		SA	A	N	D	SD	Mean	SD	Overall Rating
I take part in monitoring budgets implementation of water services by NWSC	F	1	0	13	19	21	1.3	1.5	Disagree
	%	1.9	0	24.1	35.2	38.9			
I take part in monitoring revenue collection of water services	F	1	12	5	21	15	1.6	1.8	Disagree
	%	1.9	22.2	9.3	38.9	27.8			
I participate in monitoring other customers to ensure that they perform their obliged duties towards water services	F	0	14	2	20	18	1.5	1.7	Disagree
	%	0	25.9	3.7	37.0	33.3			
I am involved in monitoring the quality of water services	F	0	1	19	29	5	1.7	1.2	Disagree
	%	0	1.9	35.2	53.7	9.3			
I am consulted to contribute to improvements in water service provision through participation in water monitoring	F	4	3	9	9	29	1.9	1.5	Disagree
	%	7.4	5.6	16.7	16.7	53.7			

Source: Primary (2015)

Findings in table H above, show that majority of respondents disagreed (38.9%) and 35.2% strongly disagreed that they take part in monitoring revenue collection of water services. With regard to community participation in monitoring revenue collection of water services, 38.9% disagreed and 27.8% strongly disagreed. As far as participating in monitoring other customers to ensure that they perform their payments is concerned, 33.3% strongly disagreed and 37.0% disagreed. In relation to involvement in monitoring the quality of water services, 53.7% disagreed, followed by 35.2% who were not sure and 9.3% who strongly disagreed. As far as being consulted to contribute to improvements in water service provision is concerned, 53.7% strongly disagreed, 16.7% disagreed and 16.7% were not sure. This finding indicates very low participation of the community in monitoring waters services.

The views of key informants were also explored on this issue in a Focused Discussion Group and individual in-depth interviews with the commercial officer. Key informants indicated very little community involvement in waters services monitoring. A councilor revealed that there is no *“time table for monitoring of waters services planning implementation by the community”*. A councilor representing women added that *“without monitoring tools and guidelines it is impossible to do meaningful monitoring”*. Monitoring can only be effective if it is well planned and has tools and objectives. The available mechanism of monitoring is not good. The current monitoring is done by mouth. There is no checklist to guide monitoring and no preset parameters to monitor. There is need to provide for a checklist and tools to guide monitoring of service provision.

Liner regression was done to establish the influence of community participation in waters services monitoring on compliance to water services payment. Scores on community participation in waters services monitoring were regressed on scores on compliance to water services payment. The findings are shown in table I below.

TABLE I: Shows Regression Results of Community Participation in Waters Services Monitoring against Compliance to Water Services Payment

R	R square	Adjusted R square	B	Beta	Sig.
0.43*	.123	.112	1.020	.43	.04

Source: Primary Data (2015)

From table I above value significance is at 0.05 level (2-tailed), while Predictor variable is presented as ‘Participation in Monitoring, and the Dependent variable as ‘Compliance to Waters Services Payment’. The regression model further indicates that the correlation between Community participation in monitoring and Compliance to payment is $r=0.43$. This implies that community participation in monitoring is moderately and positively related to compliance to payment. The relationship was significant at $p\text{-value} < 0.05$. The results of the regression model indicated an adjusted R-square of 11.2%. This implies that on average, community participation in monitoring causes a corresponding 11.2 % increase in compliance to payment.

4.4 Overall contribution of Community Participation in Wasters Services Management on their Compliance to Payment for the Services:

The researchers finally investigated the combined (overall effect) of community participation in water services management on compliance to payment for the services. Scores on participation in planning, pricing and monitoring were regressed with scores compliance to payment. Table J below shows this effect.

TABLE J: Shows a Multiple Regression Analysis of Community Participation against Compliance to Payment

Model	R	R square	Adjusted square	R	Std. Error of the estimate	Sig.
1	.57 ^a	.41	.42		2.90648	.02 ^a

Source: Primary Data (2015)

From table J above, value significance is at 0.05 level (2-tailed), while Predictor variable is presented as ‘Participation in Planning, Pricing and Compliance, whereas, the Dependent variable as ‘Compliance to Waters Services Payment’. The further shows that overall correlation (linear relationship) between compliance to payment (dependent variable) and community participation is $r=0.56$. This implies that, generally, community participation is positively related to compliance to payment. The relationship was significant at $p\text{-value} < 0.05$. This means that community participation in water services planning, pricing and monitoring can significantly increase their compliance to water services payment.

The results of the regression model indicated an R-square of 41%. This implies that on average, community participation can explain about 41 per cent of compliance to water services payment. This means that community participation has a significant effect on compliance to payment and therefore water services companies should have mechanism for enabling community participation if they are to increase their revenue collection.

Findings from secondary sources reveal that the Ugandan urban water subsector is one of the sectors that have not yet embraced a dedicated multi-stakeholder consultation process at water management even after a range of research that has proved that community participation enhances sustainability and ownership. The process of setting the tariff in NWSC proposes a representation of the communities through their respective Members of Parliament, who approve a final uniform water tariff charges for all areas under NWSC management (NWSC statute, 1995). NWSC Water tariffs have been adjusted four times during the period 1996–2003 (Salman, 2008) but with no direct involvement of the community. The water sector guidelines also do not guarantee the involvement of water users. Although such guidelines call for a consideration into the consumer interest, it does not guarantee water users' contribution at planning, pricing and monitoring.

In addition, numerous recommendations often relying on simplistic 'standard' panaceas have been put forward for water governance reform without testing their appropriateness in diverse contexts (Pahl-Wostl et.al, 2012). Some practitioners, who have worked with participatory approaches for decades, note that there is widespread disillusionment amongst themselves, community and the wider public, despite the literature available regarding how, when and why to adopt participatory approaches (Richards, et al., 2007). Often there is no consistency in data sets maintained by different agencies, which causes difficulties in negotiations (Gooch & Stalnacke, 2010).

5. DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction:

This chapter presents a discussion, conclusion and recommendations of the study that examined the influence of community participation in water services planning, pricing and monitoring on compliance to payment for the services.

5.2 Discussion:

5.2.1 Community Participation in Planning for Water Services and Compliance to Payment:

The first objective of the study was to determine the effect of Community participation in planning for water services on compliance to payment. The findings revealed that community participation in planning for water services positively contributes ($r^2=0.29$) compliance to payment for water services. As indicated by Mugumya (2013), the contribution could have been higher if community participation was high. The findings showed that there was some community representation in the planning of water services, through the local water services committee. Participation was not very inclusive. Representation was limited to LCs and Business representatives, who don't fully present the needs of the community to NWSC. A communication gap between the technocrats and the community also existed. This findings agreed with Gooch and Stalnacke, (2010) who note that it is still difficult to have meaning community participation in water service planning because of the policy challenges involved in securing it. In water services meetings, the technocrats from NWSC withhold important information from the community representatives which they can use to make a meaningful contribution to the planning process. This makes it difficult for the community members to present their needs. NWS Cuses technical language that is difficult to understand by the community representatives. As a result community participation is just perfunctory. So no significant contributions are made. This scenario makes it very difficult for the community representatives to participate in the pricing and monitoring of water services. This has resulted to alienation for the community and lowered compliance to payment for water services. The community feels that NWSC is there out to fleece them and so many only pay bills after being disconnected.

5.2.2 Community Participation in Pricing for Water Services and Compliance to Payment:

The second objective of the study was to find out the effect of community participation in pricing for water services on compliance to payment. The findings revealed very low ($r^2=.16$) but positive influence of community involvement in the pricing and billing of water services on compliance to payment for water services. This was probably due to low community involvement in the pricing and billing of water services. NWSC does not fully involve customers in determining the price and billing system of water services. As indicated by Bijlsma, Bots, Wolters, & Hoekstra, (2011),

when customers feel that they have been left out of pricing they think that the service provider is out to cheat them. This reduces community's willingness to pay for the waters services. Razzaque (2009) adds that very few customers subsequently pay their bills promptly or in advance, though they would have the ability to pay. This because the community feels that transparency in pricing and billing is non-existent (NCC, 2010).

5.2.3 Community Participation in Waters Services Monitoring and Compliance to Water Services Payment:

The last objective was to assess the effect of community participation in waters services monitoring on compliance to water services payment. The findings showed a low ($r^2=.11$) but positive influence of community participation in water services monitoring on compliance to water services payment. This shows that community participation can significantly increase community compliance with water services payment (Richards, et al., 2007). However, the contribution was low due to very little community involvement in water services monitoring. Findings revealed that NWSC has no time table for monitoring of waters services by the community. Monitoring tools and guidelines were not also available. Gooch and Stalnacke (2010) said that this shows lack of good structure and planning for monitoring yet, Yang and Callahan (2007) showed that monitoring can only be effective if it is well planned and has tools and objectives. The available mechanism of monitoring is very weak and rarely implemented. Findings revealed that monitoring is done by mouth. No checklist to guide monitoring and no preset parameters to monitor. There is need to provide for a checklist and tools to guide monitoring of service provision. This scenario contributes to low compliance to payment of water services, because respondents do not have ownership of the project. The findings agrees with the study by Atkins & Wildau (2008) which stated that "by giving stakeholders input, directly addressing their concerns, and fostering participation, participatory monitoring helps generate a sense of ownership and responsibility, thereby increasing social capital and diffusing possible sources of conflict".

5.3 Conclusion:

The findings reveal that the current community participation in water services planning in Kitgum is not very inclusive and many times does not achieve its intended purpose. The few community representatives, don't fully present the needs of the community. This has created a very big communication gap between the NWSC and the community. NWSC withholds important information from the few community representatives during waters services meetings. This has made current community participation to be only perfunctory. Representatives do not have the information and the capacity to make contributions that represent the interested of the community. There is also no community involvement in the pricing of water services. Customers are only sent water bills and they do not know how it is arrived at. Majority of customers feel that NWSC is cheating them and meters are not accurately read. Complaints about the accuracy of pricing and billing are on the increase. This has resulted into low compliance to payment of bills. Very few pay their bills promptly or in advance, though they have the ability to pay. The community feels that transparency in pricing and billing is non-existent. It was also evident that very little community involvement in waters services monitoring exists. There is no time table for monitoring of waters services by the community. Monitoring tools and guidelines are not there which makes meaningful monitoring difficult. The current monitoring is done by mouth. There is no checklist to guide monitoring and no preset parameters to monitor. There is need to provide for a checklist and tools to guide monitoring of service provision.

5.4 Recommendations:

In view of the findings, the following recommends are made in respect to each and every attribute of the study that to say, Community participation in waters services Planning, Pricing and Monitoring, as indicated below:

5.4.1 Community Participation in Waters Services Planning:

- A larger section of the community is left out by the limited representation of the LCs and business community. Representation in planning should be expanded to include most of the sections of the community such as women, people with disabilities, farmers and so forth.
- In the planning meetings the NWSC technocrats should use a down to earth language so that they can reach even those who are not well educated or those who do not understand the technical terms.
- Programs to empower the community with effective participation and engagement techniques are needed in this area. These will raise the community's capacity to effective participate in the management of utilities services in their areas.

5.4.2 Community Participation in Water Services Pricing:

- * Mechanisms should be put in place to involve the community representatives in pricing and billing water. Meter reading should be done in the presence of a representative of the home.
- * NWSC should guide the community in understanding the reading of the water meter and calculation of the water bill. Community meetings on the constituents of the water meter price should be held regularly.
- * Changes in water tariffs should be communicated in advance to the community using a far-reaching forum.

5.4.3 Community Participation in Water Services Monitoring:

- ❖ Currently, there are no guidelines on community participation in monitoring water services. These should be written and effectively distributed by both central and local governments.
- ❖ A tool that contains monitoring guidelines for community participation should be written and explained to the community.
- ❖ The community should be empowered through community seminars to do water services monitoring.

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