



THE EFFECT OF IMPROVED REVENUE-COLLECTION EFFICIENCY STRATEGY ON THE PERFORMANCE OF WSPS IN KENYA: A CASE NYAHURURU WATER AND SANITATION COMPANY, NYAHURURU, KENYA

Muriithi, J. M., Ochieng, I., & Nzioki, P. M.

THE EFFECT OF IMPROVED REVENUE-COLLECTION EFFICIENCY STRATEGY ON THE PERFORMANCE OF WSPS IN KENYA: A CASE NYAHURURU WATER AND SANITATION COMPANY, NYAHURURU, KENYA

Muriithi, J. M.,^{1*} Ochieng, I.,² & Nzioki, P. M.³

^{1*} Master Candidate, Department of Commerce, Laikipia University [LU], Kenya

² Professor, Ph.D, Senior Lecturer, Department of Commerce, Laikipia University [LU], Kenya

³ Ph.D, Senior Lecturer, Department of Commerce, Laikipia University [LU], Kenya

Accepted: November 11, 2019

ABSTRACT

This study analyzed the effect of improved revenue-collection efficiency strategy on the performance of WSPs in Kenya; case of Nyahururu Water and Sanitation Company (NYAHUWASCO), Nyahururu. The study used descriptive survey research design and its target population was the 86-permanent staff of NYAHUWASCO, Nyahururu as at March 2017. A stratified random sampling was adopted in which respondents from different departments were targeted and which gave the sample size of 71 members. A pilot testing of the instruments was done to a selected sample of 6 permanent staff of Nakuru Water and Sanitation Company, to test their validity and reliability. Primary data was collected using questionnaires while secondary data was collected from existing relevant documents. Data was analyzed using descriptive and inferential statistics, with the help of Scientific Package for Social Sciences (SPSS) computer program, in order to determine effect of improved revenue-collection efficiency strategy on performance of NYAHUWASCO. The study revealed that practices that improved revenue collection efficiency such as introduction of mobile payment solutions, decreasing bill collection periods, disconnection policy and increase in the number of the billed customers enhanced performance at NYAHUWASCO. The study tested a null hypothesis that stated that, improved revenue-collection efficiency strategy does not have a statistically significant effect on performance of WSPs in Kenya. The inferential statistics found that improved revenue-collection strategy effect on performance of NYAHUWASCO is statistically significant ($p < 0.01$). Therefore the hypothesis was rejected. An increase in improved revenue collection efficiency by one unit was found to increase performance by 0.359 units of NYAHUWASCO performance when all other variables were held constant. The study recommended that the government and management should enhance revenue collection efficiency such as introduction of mobile payment solutions, decreasing bill collection periods, disconnection policy and increase in the number of the billed customers.

Key Words: Revenue Collection, Efficiency

CITATION: Muriithi, J. M., Ochieng, I., & Nzioki, P. M. (2019). The effect of improved revenue-collection efficiency strategy on the performance of WSPs in Kenya; A case Nyahururu Water and Sanitation Company, Nyahururu, Kenya. *The Strategic Journal of Business & Change Management*, 6 (4), 1335 – 1341.

INTRODUCTION

Provision of water has remained one of the challenges for the government for a long time. With increasing growth in population and the subsequent social economic pursuits, including urbanization, industrialization, tourism and agricultural activities, demand for water has increased rapidly. If not checked, the demand for water may soon surpass the supply not only due to growing needs of growing population, but also limited resources (GoK, 2006(a)). Despite the plans, Kenya is one of the few countries in the world where urban drinking water coverage from improved sources actually declined during the 1990 – 2004 period according to a report joint report of WHO and UNICEF (WHO/UNICEF, 2006). Furthermore, estimated losses at the unit cost of production losses at the national level due to non-revenue water in 2014 were a high of 5.2 billion Kenya shillings. This which is on the higher side in a country that is classified as suffering from water scarcity, and which implies poor performance on the side of WSPs. Statistics from the Water Services Regulations Board (WASREB) showed that most Kenyan WSPs do not meet the benchmark laid down in revenue collection with most WSPs recording an average of 86% in the 2006-2007 fiscal years. Garissa collected as low as 40% of the water billed. The metering ratio in 2006-2007 in most WSPs was 82% while only 13 WSPs reported 100%. In addition, the 2013/14 report shows that about 42% of the supplied water in Kenya was not billed, with only Nyeri Water Services Provider meeting the benchmark set by the Ministry of Water and Irrigation while the rest (90) of them did not. The literature available is not conclusive that reforms in water service providers have led to performance improvement. It is therefore necessary to assess whether the reform strategy has led to improvement of performance of the WSPs in Kenya or not. This study is significant to the water sector including the Ministry of Water and Natural resources as has highlighted the reforms that have enhanced performance of WSPs and those that

haven't. It is also important as it could help WSPs to improve their performance. It has also added to academic literature for future scholars who may be interested in the water sector reforms.

THEORETICAL FRAMEWORK

This study was based on Stakeholders Value Perspective theory whose main proponent is Edward Freeman (2010). This theory addresses morals and values in managing an organization rather than profitability (Freeman, Harris, & Wicks, 2010). A stakeholder-based perspective of value is important from a managerial perspective because managers tend to focus attention on things that lead to higher performance based on what actually gets measured. Rather than focusing primarily on economic measures of performance, a stakeholder-based performance challenges managers to examine more broadly the value their firms are creating from the perspective of the stakeholders who are involved in creating it. Thus, it gives managers the information they need to engage stakeholders where they are and enhance managerial ability to use such insights to create more value. At its core, this perspective is about creating a higher level of well-being for the stakeholders involved in a system of value creation led by the firm (Harrison & Wicks, 2013). This study has laid down some major points regarding the water reform strategies introduced by NYAHUWASCO in order to sharpen the perception why both the consumer's needs and the government policy should be taken into account and harmonized with each other to fortify the general development of state agencies. For NYAHUWASCO to satisfy both its internal and external stakeholders, it should focus on improving cash collection over billings, expand its geographical reach, increase the number of customers connected, reduce water lost in the distribution and ensure amount of water sold has been billed.

LITERATURE REVIEW

Revenue collection efficiency is a measure of the efficiency with which a utility is able to realize cash from its billed revenue. The Kenya National Water Development Report (2006) shows that tariffs are out of line with costs of providing water and that they add to the financial difficulties. The tariff levels do not adequately reflect the true economic cost of future water supplies (World Water Assessment Programme, 2007). The World Bank (WB) estimates that 40% of households in Sub Saharan Africa can pay \$1.00 per cubic meter of water provided water costs do not exceed 5% of the household budget. This is estimated it can cover the operation, maintenance and infrastructure costs (Africa Infrastructure Country Diagnostic (AICD), 2008). Most Kenyan WSPs do not meet the benchmark laid down in revenue collection with most WSPs recording an average of 86% in the 2006-2007 fiscal years. Garissa collected as low as 40% of the water billed.

A study by (Morton, 2009) asserts that, billing represents a chance to build satisfaction and loyalty by delivering customer's flexibility, accuracy, and prompt resolution of discrepancies. Understanding that billing is a customer service opportunity is an important first step. However, this step must be followed with a strategic investment in modern billing technologies that deliver process improvement, enhanced customer and agent service, and better control of and visibility into the billing operation.

Abubakar (2016) and Mugisha (2013) agreed that using threat of water disconnection as a strategy can make customers pay outstanding bills. Additionally, Cheng (2013) noted that policing and disconnection campaigns, as well as negotiations for settlement of arrears, are a few strategies used to enhance revenue collection. The Kenyan 2002 water Act which has been effective since 2003 emphasizes the role and active participation of local communities. It provides for the creation of Catchment Advisory Committees (CAC) to oversee the use, control, development,

protection and conservation of water resources within each catchment area. Local communities are deemed to be well-informed on their unique water issues, and therefore, contribute immensely to decision-making and implementation of water projects in their locale. The key elements of the Act is the requirement that local authorities form autonomous Water and Sewerage Companies (WSC) with independent Water Boards of Directors to provide services and reinvest water financial returns in service delivery improvement (Ogendi & Ong'oa, 2009).

Revenue collection efficiency is a measure of the efficiency with which a utility is able to realize cash from its billed revenue. The Kenya National Water Development Report (2006) shows that tariffs are out of line with costs of providing water and that they add to the financial difficulties. The tariff levels do not adequately reflect the true economic cost of future water supplies (UNESCO, 2015).

Water and sanitation services are generally underpriced in Sub-Saharan Africa (Foster, 2010). Consequently, WSPs do not recover their costs leading to reliance on foreign aid and governmental support, and to inadequate investments. Second, under-pricing is socially unfair. Since the poorest social groups are less connected to water networks and sewerage, they are forced to turn to alternatives, and end up paying higher tariffs.

The World Bank (WB) estimates that 40% of households in Sub Saharan Africa can pay \$1.00 per cubic meter of water provided water costs do not exceed 5% of the household budget. This is estimated it can cover the operation, maintenance and infrastructure costs (Foster, 2010). Most Kenyan WSPs do not meet the benchmark laid down in revenue collection with most WSPs recording an average of 86% in the 2006-2007 fiscal years. Garissa collected as low as 40% of the water billed.

The low tariffs for both urban and rural domestic water supplies do not promote efficient utilization of water, environmental conservation and preservation. With the increasing pressures on water resources there is need to have a different view on pricing. Water should be seen as an economic and social good that has a cost. Water should be priced at rates that meet full operation and maintenance costs, and partial investment costs especially in rural areas. In urban set ups, tariffs should cover full cost but with due consideration to informal settlements. At the same time, water as a basic right should have a tariff that favors the poor and marginalized people, and government through social responsibility can support this by way of targeted subsidies for vulnerable groups (Institute of Economic Affairs, 2007). While raising tariffs is intended to improve the financial health of utilities, it does not always lead to higher revenue. Consumption can fall if consumers pursue other alternatives. Often the alternatives are unsafe and unhealthy (Kate & McKinley, 2007).

A principal challenge for achieving financial sustainability of water utility in sub-Saharan Africa is non-payment for services. Some consumers fail to pay simply because they cannot afford to do so. Others do not pay for reasons unrelated to income. In practice, distinguishing between these two groups is difficult (Bayliss & McKinley, 2007).

Use of mobile phones to pay for water bills through M-Pesa contribute to revenue collection as it makes paying bills easier. Residents of Nairobi and other major towns would make long trips to town to make payments and wait in long queues which discourage them from paying their bills (Water Services Regulatory Board, 2009). Mobile money is a form of electronic money that allows you to conduct financial transactions using your cell phone. It allows financial services to be extended to unbanked people at a significantly lower cost because physical infrastructure isn't needed. Mobile phone penetration is rising across sub-Saharan Africa, with

almost 76% of the population having a mobile phone subscription. The growth in mobile phone ownership raises the potential for mobile money to reach unbanked people, providing them with a more affordable payments system. Mobile money enables quicker, cheaper and more reliable money transfers over greater distances. In turn, this has allowed mobile money users to diversify their informal risk-sharing networks and draw on a wider network of social support. The study is relevant in that the low income people are able to pay for waters services through mobile payments due to reduced transactional cost compared to banks (US.News, 2017). According to Koehler, Thomson, and Hope, (2016) enhancement of the settlement of water bills can be done using strategies such as mobile money services. Likewise, mobile money payments also help to reduce petty corruption in the revenue collection process apart from making payment convenient for customers (Mishra, 2012). A study was conducted in Tanzania by Krolikowski, (2014) and found that payment strategy enabled by mobile was in use. Krolikowski also found out that the strategy enabled timely settlement of water bills by customers, and make more payments per year as well as to enhance revenue collection. Therefore, innovations in revenue collection, such as the use of mobile payment systems, can enhance revenue collection because customers enjoy payment convenience.

A report by Water Services Regulation Board shows that disconnection policy employed by a WSP for non-payment by customers will often impact on its collection efficiency. Most utility managers indicated that they apply service cut-offs rigorously and without political interference. A study by Wagenhofer, (2014) recommends that it is important to use an appropriate revenue collection and accounting standard by making a proper classification of commercial transactions in terms of the nature and timing of bill collection period in order to help improve company's earnings especially in times of

financial difficulty. In a study involving the construction industry in Uganda, (Alinaitwe, Apolot, & Tindiwensi, 2013), it was found that delayed collection of payments affected completion of projects negatively. Therefore, business leaders who decrease payment collection periods improve cash flow and back expanded growth from the revenue collected. A good business strategy for businesses to employ to improve amounts of revenue from business operations is the sound corporate governance (Amarjit & Nahum, 2013). For example, revenue management strategies should ensure the adequacy of cash revenues needed for working capital, some of which are used for more investment in the businesses in order to generate more revenues. Therefore, leaders of business organizations should embrace strategies that would ensure adequacy in amounts of revenue collected to achieve profitability. The poor performance in terms of debtor days suggests that collecting receivables is a significant constraint for WSPs (Water Services Regulatory Board, 2011).

This study sought to establish whether there is non-payment of services offered by NYAHUWASCO.

METHODOLOGY

The research design that was used in this study was descriptive survey research design. According to (Mugenda & Mugenda, 1999), a descriptive survey design aims at explaining and describing the state of affairs as they are and then report the findings. The design involves fact finding, formulation of important principles of knowledge and solution to significant problem (Orodho, 2004). In this study, the survey targeted NYAHUWASCO staff members so as to understand their perceptions and opinions about the phenomenon under study.

The target population for this study was 86 permanent staff (union sable staff and management staff) of Nyahururu Water and Sanitation Company (NYAHUWASCO) as at March 2017. The study

narrowed down to Nyahururu Water and Sanitation Company (NYAHUWASCO) as a Water Service Provider. Nyahururu Water and Sanitation Company is a water service provider (WSP) mandated by Northern Water Services Board (NWSB) to provide quality water and sanitation services within Nyahururu Municipal, within its environs and at Marmanet scheme. NYAHUWASCO offers such services as water supply, supply interruptions, disconnections and reconnections, billing, pay-services, raw sewage collection and its treatment.

A stratified random sampling was adopted in this study. According to Mugenda and Mugenda (2003), the goal of stratified random sampling is to achieve desired representation from various sub-groups in the population. This method was most appropriate because the population of the study formed clear strata in the form of various departments in Nyahururu Water and Sanitation Company (NYAHUWASCO).

The following formula which applicable where the target population is less than 10,000 was used to determine the sample size.

$$n_f = \frac{n}{1 + n/N}$$

Where:

n_f = the desired sample size (when the population is less than 10,000).

n = the desired sample size (when the population is more than 10,000).

N = the estimate of the population size

$$n_f = \frac{384}{1 + 384/86} = 71$$

The research applied proportionate stratification that was based on the stratum's share of the total population to come up with the sample in each stratum.

The researcher collected both primary and secondary data. Primary data was obtained through use of questionnaires. To enhance validity, the research

instruments were subjected to expertise views of the supervisors and the lecturers in in the school of Business of Laikipia University. The supervisors critique was helped improve the content validity by removing what was not valid. Prior to collection of the actual data, pilot testing of the questionnaires was done to test the reliability and accuracy of language and comprehension of meanings and to test whether the pilot respondents understood the questionnaire. The tools were piloted to a selected sample of 6 permanent staff of Nakuru Water and Sanitation Company which is a similar WSP utility to NYAHUWASCO. The researcher randomly sampled 6 respondents and presented the questionnaires to be used in actual study.

Data was analyzed with the help of statistical package for social science (SPSS) version 20. In descriptive statistics, the study analyzed data for means, standard deviations and then presented in form of tables, graphs and the charts. Regression analysis was used to find out whether an independent variable predicted a given dependent variable. Regression was used to determine whether the dependent variable could be predicted using the independent variable.

RESULTS

All the respondents affirmed that the introduction of the mobile payments system had increased the rate of payment of bills. On the effects of the increased number of the billed customers, the majority of the respondents observed that increase in the number of the billed customers had increased amount of revenue collected. The respondents further asserted

REFERENCES

- Abubakar, I. R. (2016). Quality Dimensions of Public Water Services in Abuja, Nigeria. *Utilities Policy*, 38, pp.43-51.
- Alinaitwe, H., Apolot, R., & Tindiweni, D. (2013). Investigation into the Causes of Delays and Cost Overruns in Uganda's Public Sector Construction Projects. *Journal of Construction in Developing Countries*, 18(2), pp. 33-47.

that water disconnection policy used by the company had made the customers to promptly pay their bills. Furthermore, the reduction in the bills collection period had reduced the amount of revenue losses through long period bill collection periods as the majority of the respondents affirmed. R^2 value was 0.533; that is 53.3% of the performance of water service providers could be explained by the improved revenue collection efficiency. An F statistic 77.631 was supported by a probability value of 0.000 which was less than 0.05. This indicated that the model was significant. The inferential statistics found that improved revenue-collection strategy effect on performance of NYAHUWASCO is statistically significant. Therefore the hypothesis (H_0) that stated that 'Improved revenue-collection efficiency strategy does not have a statistically significant effect on performance of WSPs in Kenya was rejected.

CONCLUSION AND RECOMMENDATION

The study recommended that practices that improved revenue collection efficiency such as introduction of mobile payment solutions, decreasing bill collection periods, disconnection policy and increase in the number of the billed customers enhanced good service delivery in NYAHUWASCO. They are therefore good measures to improving performance in WSPs as overall they lead to improved performance.

The Government and management should enhance revenue collection efficiency such as introduction of mobile payment solutions, decreasing bill collection periods, disconnection policy and increase in the number of the billed customers.

- Amarjit, S. G., & Nahum, B. (2013). The Impact of Corporate Governance on Working Capital Management Efficiency of American Manufacturing Firms. *Managerial Finance*, 39, pp. 116-132.
- Cheng, D. (2013). (In)visible Urban Water Networks: The Politics of Non-payment in Manila's Low-income Communities. *Environment and Urbanization*, 25, page 249.
- Foster, V. (2010). *Executive Summary Africa Infrastructure Country Diagnostic Overhauling the Engine of Growth: Infrastructure in Africa*. New York: World Bank.
- Freeman, R. E., Harris, J. S., & Wicks, A. C. (2010). *Stakeholder Theory: State of the Art*. Cambridge: Cambridge University Press.
- GoK. (2006(a)). *The National Water Resources Management Strategy (NWRMS) (2006-2008)*. Nairobi: Government Printer.
- Harrison, J. S., & Wicks, A. C. (2013, January). Stakeholdre Theroy, Value and Firm Performance. *Business Ethics Quarterly* 23: 1.
- Institute of Economic Affairs. (2007). *A Rapid Assessment of Kenya's Water, Sanitation and Sewerage Framework*. Nairobi, Kenya: IEA.
- Kate, B., & McKinley, T. (2007). Privatising Basic Utilities in Sub-Saharan Africa: The MDG Impact. *Research Brief of the Internatinal Poverty Center*.
- Mishra, A. A. (2012). Not for free: Revenue Strategies for a New World. *Journal of Consumer Marketing*, 29, pp. 312-313. doi: doi:10.1108/07363761211237407
- Morton, K. (2009). Billing modernization: Strengthening customer satisfaction to build a competitive advantage. *Journal of insuarence operations*.
- Mugisha, S. (2013). Applying Incentives to Increase Revenue Water in Urban Systems. *Journal of Water Supply: Research and Technology. AQUA*, 62 , pp. 268-278.
- Ogendi, G. M., & Ong'oa, I. M. (2009). Water accessibility and water ethics in kenya. *santa clara journal international law* (7), pp 177.
- UNESCO. (2015). *Water for a sustainable World*. Paris: United Nations Educational, Scientific and Cultural Organization.
- US.News. (2017). *The Benefits of Mobile Money in Kenya*. Retrieved from Best Countries: [HTTP://WWW.usnews.com](http://www.usnews.com)
- Water Services Regulatory Board. (2009). Water and Sanitation Coverage. *Sub-Sector Issue No 3. : WASREB*.
- WHO/UNICEF. (2006). *Meeting the MDG drinking water and sanitation terget:the urban and rural challenge of the decade*. Geneva: World Health Organization.