

FACTORS AFFECTING FINANCIAL SUSTAINABILITY OF WATER AND SEWERAGE PROVISION IN CAPE TOWN, SOUTH AFRICA

M. BEDA¹, Darlington Peter ONOJAEFE²

¹ *Graduate Centre for Management, Cape Peninsula University of
Technology, Cape Town, South Africa,
Email: Mmthandazo59@gmail.com*

² *Graduate Centre for Management, Cape Peninsula University of
Technology, Cape Town, South Africa, Email: Onojaefed@cput.ac.za*

How to cite: BEDA, M., ONOJAEFE, D.P. (2021). “Factors Affecting Financial Sustainability of Water and Sewerage Provisions in Cape Town, South Africa.” *Annals of Spiru Haret University. Economic Series*, 21(2), 163-179, doi: <https://doi.org/10.26458/2127>

Abstract

Financial sustainability of water and sewerage provision is undermined by consumers' inability and reluctance to pay service fees. South African municipalities are providing water and sewerage services at high maintenance and operational costs, households and businesses that are unable and/or committing to pay their full accounts timeously. This study examines the provision of water and sewage service and presents strategic framework to manage revenue collection to achieve financial sustainability of water and sewerage provision. The study applied the interpretive research method to collect and analysed data for improved understanding of service provision and revenue collection mantra. The main objective of this study was to investigate factors affecting financial sustainability of water and sewerage provision in Cape Town. In this study an interpretive research method was embraced and qualitative research design was used to collect qualitative data by means of interviewing the senior officials using semi structured interviews. Narrative methods of analysis were applied in analysing data collected from randomly



Issue 2/2021

selected Cape Town officials including observations and secondary data. The results showed that although Cape Town is making efforts of generating revenue by means of enforcing water and sanitation services payments, there is still a percentage of residents that refuses to pay for services resulting in revenue loss. The other reason for loss of revenue was unaccounted water which was the focus of Water and Sanitation. The reasons advanced for unwillingness to pay for water and sanitation services by consumers were unemployment, poverty, unequal distribution of services and general ignorance.

Keywords: *cost recovery; financial sustainability; maintenance and operational costs; revenue management.*

JEL Classification: G38

Introduction

The South African constitutional structure formed a multi-sphere system of government, with separately sphere of government, each sphere has legislative and executive self-government powers embedded by the Constitution. These government spheres form a unitary decentralised system which is interdependent and inter-related to each other with political power, administrative accountability and fiscal responsibility (USAID, 2009). Bestowing to the Constitution of Republic of South Africa (1996), each municipality has a prerogative to govern its own local government affairs together, come up with its own initiatives which must be in line with national and provincial legislation. Thus, the above point of argument demonstrates that local government should provide unbiased and accountable community base to its local citizens. Municipality should also ensure the provision of community based services is guarantee and its sustainability is not compromised and further ensure social and economic development. Municipality should uphold a conducive and healthy environment and lastly inspire community and organisational involvement in the matters of local government.

Consumers are unable and/or not willing to pay for water and sewerage provision which results into financial unsustainability. According to Alence (2002), the lack and willingness to pay municipal bills generates financial difficulties and jettison and/or weakens financial sustainability of water and sewerage provision. Some of



Issue 2/2021

the studies on the service delivery objective for all with utility financial sustainability, have recommended that communities have to be involved in deliberations on service provisions and the maintenance of infrastructures [Godfrey & Obika, 2004; Kyessi, 2005]. The intensification in financial revenue is in line with the prevailing international practice used by developmental agencies rising funding to reimburse for shortfall in project financing [Booyesen, 2001a]. The success of the practice of recovery of cost would make provision for budgetary resources constraints on capital expenditure, allowing the extension of water and sewerage services to all South African households [DWAF, 1994b].

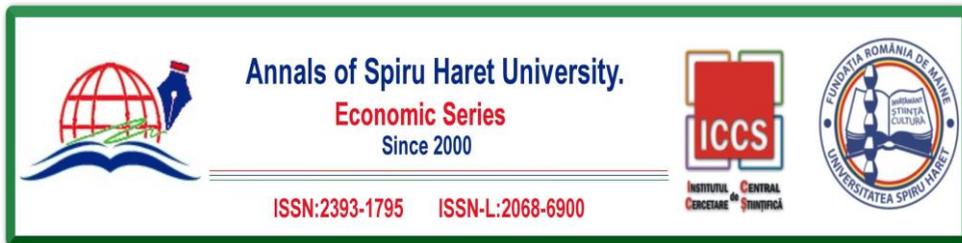
LITERATURE REVIEW

The Model of Sustainable Service Delivery in Local Municipalities

Municipalities have the duty to develop for the municipality to accomplish its administrative, budget and planning processes to ensure that basic requirements of the society is prioritized and community is developed socially and economically, and partaking in national and provincial development platforms is improved. The above objective will be accomplished through the execution of an Integrated Development Plan (IDP) and Strategy of the municipality, together leveraging of development capital and related resources [Pretorius & Schurink, 2007]. Furthermore, municipalities should vigorously advance public and private sector co-ordination of resources and investment to meet developmental objectives and be financially sustainable.

Benefits of Meeting Water and Sewerage Millennium Development Goals

According to OECD (2011), water and sewerage provision produce considerable achievements for human wellbeing, economic development and to the environment as a whole. The report further advised that affording clean drinking water and sewerage reduces health risks and allow time for education and other fruitful activities together with labour force increase productivity. Quality sewerage removal assists in quality surface waters with benefits for the environment together with economic sectors that depend on water resources like fishing, agriculture and tourism. Likewise, the World Health Organisation (WHO) has anticipated that almost 10% of the global burden of diseases could be forbidden in emerging nations through water, cleanliness and sanitation interventions.



Issue 2/2021

WHO estimated that USD 84 billion per annum in benefits could be generated if water and sanitation development goals are to be met. Amongst the benefits that could be achieved include time gains of three quarters and the rest driven by lessening diseases relating to water [OECD, 2011]. According to Gadgil, 1998; Kuylenstierna *et al.*, 1998; United Nations, 2002; Hamdy *et al.*, 2003 by the year 2050 around 40% of the population around the world will experience water scarcity. Great amount of time, income and other resources is devoted by under-privileged people to safeguard water to meet their basic needs. If water scarcity and competition for water increases in quality and quantity together with location that would threaten advancements made in eradicating poverty, public health and food production, more especially in developing countries like South Africa. Water allocation can be judged among users from the economic efficiency view point, where allocation of water are part of investment project series [Cai *et al.*, 2003].

Economic Impact of Water and Sewerage Service Provision

In the past couple of years and up to now, water and sewerage provision has been one of the points of focus in the local government in South Africa and critical alterations are progressively happening. The manifestation of these changes in South African municipalities is the introduction of new oversight national department of Water and Sanitation under Minister Nomvula Mokonyane and the introduction of new technologies to combat challenges facing water and sewerage provision, for example, dry sanitation and desalination of sea water as an alternative to clean water toilet flushing system. This new technology system has been introduced by Minister Mokonyane to the public in a nationwide campaign by her department on 22 May 2015. With the budget of R16 billion, with more than R800 million going towards water planning and R12.5 billion going towards water infrastructure development in 2015/2016 financial year alone [SABC, 2015]. Provision of clean satisfactory water and sewerage services becomes vitally important in the countries' economic development. If inhabitants' access to clean water, this improves their health, which in turn provides them the opportunity to channel their energy towards economic undertakings. Most economies in Africa are sustained by agricultural production and activities which in turn is sustained by water. Statistics SA, (2016) quoted in the Agriculture Market Intelligence report (2017), pointed out primary



Issue 2/2021

agriculture in South Africa contributes about R66.7 billion (2%) Gross Domestic Product of South Africa at the end of the second Quarter in 2016.

Factors Affecting Financial Sustainability of Water and Sewerage Provision

To achieve financial sustainability it is important to identify and address some of the key financial constraints that could affect and impact on financial sustainability of water and sewerage provision. These key financial constraints were acknowledged by PwC, in their National Financial Sustainability report Study of Local Government commissioned by the Australian Local Government Association. They acknowledged the following shared features of municipalities characteristically facing financial sustainability limitations which fairly often include:

- Revenue growth insignificant
- Cumulative non-core involvement delivery due to pressure from community demands, with some municipalities inclined to step outside the provision of non-traditional service.
- Cost growth that far exceeds revenue generation. Cost and revenue growth deviation leads to municipalities operating on a shortfall which results in postponing infrastructure renewal expenditure.
- Some municipalities have a tendency or they are inclined to run on operating deficits which results in postponing and under spending on the renewal of infrastructure, more especially on community groundwork resulting in annually recurring crafting backlog.
- Some municipalities lack robust financial and asset management ability which are crucial to recognising sustainability glitches, resulting in renewal elevation expenditure.
- In some municipalities forming a small proportion have limited access to rate revenue due to small annual rate increase and initial low rating base.

RESEARCH METHODOLOGY

Data and Sample method

An interpretive research method was implemented for this study. The interpretive research method aims to offer understanding into how a specified occurrence is interpreted and understood [Saunders *et al.*, 2012a]. Dissimilar to the other technique such as the exploratory research method that provides an explanation of the experimental phenomenon. Usually phenomena like factors affecting financial sustainability of water and sewerage provision recourses to



Issue 2/2021

experiences of factor importance – such as economic recession, or the development of an understanding of impact of the recession and inflation cost of services and increase in service charge. Interpretive method is compatible with qualitative research design that has been used to gather qualitative data using convenience sampling method to selected respondents within water and sanitation division of the municipality [Denzin & Lincoln, 2005].

I consider this research method to be appropriate for the study because it required a report on factors affecting financial sustainability of water and sewerage provision. The study adopted a convenience sampling method.

Collection of observation data

According to Saunders (2009), primary observations involve the researcher writing down what was said at that particular time. In this research, the researcher was a primary observer since he was present when the action happened. The researcher kept a diary of what was happening. The researcher wrote down discussions that would have happened on a particular day so as not to forget. Designed and Administered semi-structured questionnaires were used for the interviews to gather primary data needed to attain the aims of the research from the Water and Sanitation department's executive management. The interviews were recorded and later transcribed.

Semi structured Interviews

Primary data was collected my means of interviewing senior official of water and sanitation department using designed and administered structured interviews. Structured interviews allowed the researcher to ask open-ended questions to get in-depth knowledge about the factors affecting financial sustainability of water and sewerage provision as a research subject. The researcher took notes, use transcriptions and audio recordings to capture data throughout interviews. The data collection instrument was open questions by means of recorded interviews with selected municipal officials. Yin, (2003a) argues that collecting data in case study interview becomes an essential method to employ. This is due to the fact that case studies research is about human affairs that should be reported and interpreted through the eyes of specific interviewees and respondents that are well informed providing important insights about the phenomenon [Yin, 2003a].

Water and Sanitation Executive Management Sample Profile

There are 14 Executive management officials in water and sanitation department who are selected as respondents for this research and an interview request letter was sent to each official to ask for the date specified on the letter for an interview. This request letter for an interview was followed up by numerous telephone calls to each respondent to ascertain the availability for the interview to be conducted. Below is a profile of respondents as per the sampled population,

Water and Sanitation Executive Management Officials Profile of Respondents

Population	Sample Total Number	Respondents Total Number	Respondents Percentage
Water and Sanitation Executive officials	14	8	57%

Source: Beda's Respondents profile, 2015

As explained in the sample consisted of 14 executive management official of Water and Sanitation and because of non-availability and tight schedule of some of the respondents, out of the 14 official 8 officials were interviewed for this study. The processes of interviewing were semi structured and all 8 respondents were asked the same questions and given an opportunity to respond to each question.

Interviews

According to Blaxter *et al.*, (2006) cited in Alshengeeti (2014), choosing to do interviews is important for researchers as it gives them the chance to access information which is not necessarily accessible using questionnaires and observations. Before I Conducted interviews I sought permission from the respondents to audio-record the interviews. I provided reasons to the respondents as to why I preferred the interviews to be audio-recorded. This concurs with Saunders (2009) assertion that permission must be granted to audio record an interview and that the interviewer must provide reasons for that [Healey & Rawlinson, 1994, cited in Saunders, 2009]. I held number of separate interviews with management of City of Cape Town, water department. Saunders (2009) explains that in order to produce data which is reliable as well as reducing biasness, interviews can be recorded.

Theron and Wetmore (2005) cited in Matibane (2010), postulates that in participatory observation, variations of conversation and observation are used. Theron



Issue 2/2021

and Wetmore (2005), as cited in Matibane (2010), suggest that under participatory observation, the researcher has to be a resident of the community for a period of time, in which he/she wishes to observe. At the time of the research, the researcher was an employee of the city of Cape Town, so was able to attend some of the staff meetings where issues regarding water and sewerage provision were discussed. These meetings were attended by shop floor workers, middle managers as well as top management.

Importance of observations

Observations help researchers understand participants' nonverbal communication which might help to understand how they feel. According to Schmuck (1997) cited in Kawulich (2005), observations help researchers understand the nature of relationship between participants and the people they interact with and how much time do they spend doing different activities. According to Marshall and Rossman (1995), cited in Kawulich (2005) participant observation provides researchers with an opportunity to understand meaning of words that are used by participants in interviews. Participant observations also make observers aware of the behaviour that participants would not want to portray if they knew that they were being observed [Kawulich, 2005].

Presentation of Results

Below is a presentation of the results from the gathered data.

Interviews

Factors, challenges and initiatives that the researcher gathered from interviews are going to be presented in this section.

Factors affecting financial sustainability

From the interviews conducted, interviewees mentioned the following factors that are having an impact on financial unsustainability of water and sanitation department. These are; ability to pay, unemployment, audit, budgeting, economy, payments of rates and taxes, internal processes, culture, employees' development, funding and resources like cars, instruments.

Challenges affecting financial sustainability



Issue 2/2021

One of the challenges the interviewees mentioned is that the residents do not understand why they should pay rates as they believe that these kinds of services must be offered for free. Another challenge is culture of not paying rates. In South Africa, the behaviour of not paying for basic services has developed into a culture which is engrained particularly in low-income households. Another challenge is the high rate of unemployment. As the unemployment rate soars, majority of residents find themselves struggling to fend for food let alone basic services like water and sewerage provision.

Initiatives undertaken to address the challenges

There are various initiatives which are being undertaken by the City of Cape Town Water and Sanitation department in order to address the issue of financial unsustainability. The initiatives being undertaken by the management include improving revenue collection. This is confirmed by the Department's Annual Report (2016/2017) which shows that revenue collection stands at 80%. There was an improvement in revenue collection of 3.82 % from the year 2015/2016 to 2016/2017 [Annual Report, 2016/2017].

Observations: Community interactions

Below is a presentation of factors and initiatives that the researcher gathered from community observations.

Factors

Through interactions with the community of Khayelitsha, the researcher identified various factors which define the willingness and ability of residents to pay for the services. The department's financial sustainability partially depends on the revenue it collects from the residents. One of the factors is information availability. Residents indicated that there is lack or no information on whom to contact if they need help, therefore, they end up not getting the information they need most. Also most residents said that they were not able to pay for the services as they were either unemployed or earned less. Most residents pointed to dilapidated facilities such as faulty metres and tapes as having an effect on financial sustainability of water and sewerage provision. Residents lamented that engagement and accessibility of other related services was at a record low.



Issue 2/2021

Challenges

On the part of residents, lack of information as to who to contact when faced with water or sewerage related problems is one of the challenges that residents in Cape Town meet. Residents added that there is no call centre awareness and if one happens to call, he or she waits forever before the call is responded to. Residents also indicated that there is a lack of knowledge and no nearest walk in centres as they are not publicly known. Lack knowledge about sub council offices and trust in area councillors addressing their plight of the community was mentioned as another challenge. Residents living in informal settlement and surrounding areas feel that they are being created as secondary citizens.

Observations: Normal daily tasks and staff meetings

Below is a presentation of factors and challenges the researcher gathered from observations in staff meetings and when doing normal daily tasks.

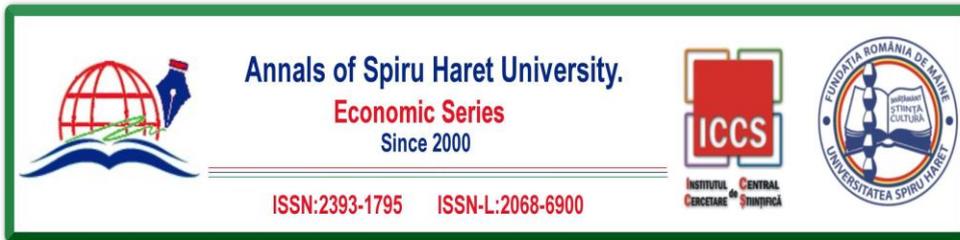
Factors

As the researcher was an employee of the Department at the time of doing the research, he had the opportunity of attending staff meetings where issues relating to service delivery were discussed. Through observations during meetings and when doing normal daily activities, the searcher identified the following factors as affecting the financial sustainability of the Department. These are;

Challenges

One of the challenges facing the department is long and frustrating procurement processes leading to slow service delivery. Top management lacks knowledge about Financial Municipal Management Act which is a necessary requirement in managing finances of municipalities. The researcher also noted that too much time was spent in meetings which hampered service delivery. The crucial stage of planning is implementation. The department is facing a challenge of lack of implementation and action orientated focus. Poor workmanship by private contractors affects the provision of services. There is also lack monitoring and evaluation with regards to poor workmanship by private contractors.

Challenges and strategies: Department records



Issue 2/2021

Below is a presentation of challenges and strategies the researcher gathered from through document analysis. According to the WCWDM Strategy (2015/2016), the department faces critical challenges which need focus and these are: *'financial viability challenges; ratio of collection and willingness to pay for services; metering and billing; ensuring full cost recovery and acceptability of the tariffs by the consumers; reduction in unaccounted for water; high financial requirements; high cost of doing business, and high debt due to non-payment.'* Challenges relating to customer satisfaction are; *"meeting Service Charter standards; improved provision in accordance with the City's own set desired target levels of basic services to informal settlements and backyards; availability of services for infrastructure expansion; appropriate service standards and level of service; providing a targeted improved level of service, and provision of affordable service"* [WCWDM Strategy, 2015/2016].

Strategies

Below are initiatives which the Department of Water and Sewerage Provision in Cape Town is undertaking in order to enhance financial sustainability of water and sewerage provision;

Creation of jobs

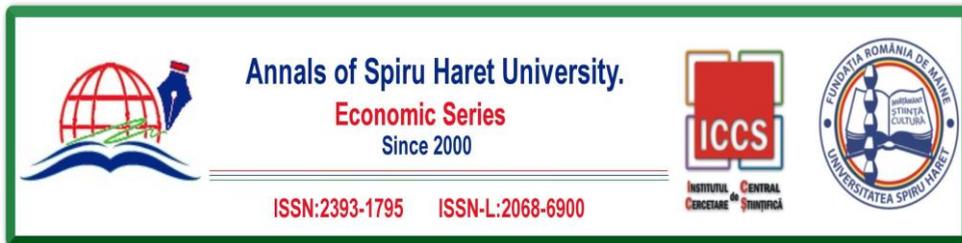
According to its Annual Report (2016-2017), the Department surpassed its job creation target by 17% when it created 5971 job opportunities against a target of 5100. Most authors allude struggling of municipalities to non-payment of services by consumers. The job opportunities created by the department will go a long way in empowering communities which will then enhance their payment capability for the services the department is providing.

Development of employees

The department exceeded its targets. The Department, in its Annual report (2016-2017) admits that to reach an optimal level of staff is difficult with only using the available resources due to the prevailing economic conditions.

Equipment

The report says that a total of 24 433 of water meters have been replaced against a target of 22000. Also, a total of 24866 sewerage meters have also been replaced



Issue 2/2021

against a total of 11450 [Annual report, 2016-2017]. This shows that the department is doing all it can to address the issue of dilapidated equipment.

Customer service

The Department created a new website where stakeholders would find useful information regarding water services. In order to provide flexibility and easy of the process involved in service provision, development and implementation of an electronic portal whereby customers can capture their own meter reading. This is has been introduced as part of initiative for meter-reading campaign which the water and sanitation department initiated whereby rate payers are required to SMS or send their reading thorough e-portal [Annual Report, 2016-2017].

Adherence to legislations

Adherence to legislations is important for municipalities since it reduces the vulnerability to fines and penalties. This reduces financial constraint which in turn increases financial sustainability. The Department's Annual Report, (2016-2017) shows that it has been adhering to legislations as evidenced by the ISO certification which was awarded many branches which fall under Department. These branches include the Finance and Commercial Branch and Support Services.

Financial Support

The interviewees emphasised the need for the local government to help departments since their resources are not adequate. Furthermore, the City of Cape Town and The Nature Conservancy, an international conservation organization, have agreed to set up a water fund which aims to safeguard water supplies and biodiversity while supporting local livelihoods [Annual report, 2016-2017]. The Department initiated a project whereby The Brakkof Reservoir, which supplies the city with water, was to be repaired. The main aim was to prevent water loss, natural disasters, vandalism and contamination which have effects of increasing costs if not addressed. Other reservoirs were to be repaired the same purpose as well.

Revenue collections



Issue 2/2021

Water and sewerage collection did improve by 3.82 % from the year 2015/2016 to 2016/2017. Although water and sewerage collection stands at 80 % respectively, the improvement from the previous year to the current one is not a significant one.

FINDINGS AND RECOMMENDATIONS

Findings

The study shows similarities between the findings of this study (factors) with those of other studies done by different researchers on the related topic. These factors are; accessibility [Statistics South Africa, 2016], resources [Statistics South Africa, 2016], culture [Morudu, 2017], human capacity [Westhuizen & Dollery, 2009; Vhonani, 2010], monitoring and evaluation [Kanyane, 2014], planning [Kanyane, 2014], communication [Kanyane, 2014], affordability [Bekink, 2006]. As the author is a resident of Khayelitsha, a township in Western Cape, he has been interacting with the communities at meetings or at social events. One of the factors affecting financial sustainability of water and sewerage provision in Cape Town as suggested by the community members is engagement.

According to Bekink (2006), many South African residents are not able to pay for basic services. Fjeldstad (2004) emphasized the fact that a relationship exists between ability and willingness to pay. Most people, who are willing to pay, have the ability to pay as well. However, there are other residents who are able to pay but not willing to due to the frustration they endure because poor service delivery. Kumar (2013) cited in Pieters (2015) mentions non-payment by consumers as one of the challenges that affects municipalities' capability in improving their revenue base. Another difficult mentioned by the interviewees is lack of sound financial management models to use in running municipalities. Pieters (2015) alludes the success of service delivery in local governments to a sound revenue system as the provision of goods or services is mainly dependent on the availability of funds.

Kanyane (2011) cited in Mantzaris (2014) suggests that a municipal budget is the basic mechanism that can be used for financial municipal management. Kanyane (2011) further says that municipal stakeholders such as mayors must have a concrete understanding of the Municipal Financial Management Act and other legislations, and how they can be applied. The Act enhances effective municipal



Issue 2/2021

finance management in local government by creating treasury norms as well as guiding standards for performance.

Recommendations

- Cape Town municipality must ensure that its employees are developed through continuous training.
- Cape Town municipality must ensure effective revenue control system is put in place as well as keeping the cost of capital at a minimum.
- Cape Town municipality must ensure that communities in Cape Town benefit through its projects, in terms of employment and business opportunities.
- Water and Sanitation department must promote public participation in determining water tariffs and preparedness of the underprivileged to pay for services.
- Water and Sanitation department must ensure effective communication for revenue enhancement by designing an effective communication strategy
- Water and Sanitation department must achieve political commitment and alignment of goal in the institution by continuous community engagement and capacity building.
- Water and Sanitation department must establish community platforms whereby residents are given roles to play in the debate of issues regarding water and sewerage provision.
- Improve the long and frustrating procurement processes leading to slow service delivery through reducing the number of steps involved in procurement.
- Management must be well acquainted with the Municipal Financial Management as to be effective in decision making regarding the management of finances of municipalities.

CONCLUSION

The results of the study indicate that the Department is facing challenges in developing as well as motivating its employees. This is partly due to lack of adequate funds. The Department must mobilizes sufficient financial resources so as to develop and retain the staff. Mdlongwa (2014) stresses that paralysis in service provision by municipalities is partly due to a lack of adequately skilled workforce. The Department must ensure that its revenue collection mechanism is effective and also



Issue 2/2021

that all other charges levied against users recover the costs involved in water and sewerage provision. The department must also ensure that the cost of capital is kept at a minimum. While the department is doing a lot to maintain some of its assets like taps, there is still a lot which need to be done to take care of the rest of the assets. The timely maintenance of the assets will eliminate unnecessary costs and time lost in attending to frequent breakdown of machinery and equipment. The Department must also reduce irregular spending.

The Auditor General Report (2018) indicates that most municipalities put themselves under financial distress due to unreasonable spending. The Department must ensure that any investment in projects relating to water and sewerage provision leads to job creation for the communities of Cape Town. This will go a long way in enhancing the income of the residents and improve their ability to pay for the services provided by the Department. Any waste products from the Department's operations must not compromise the health of the community as this will have an effect on their ability to pay for the water and sewerage services as they will be channelling all their resources towards their health. The Department must establish community platforms whereby influential leaders of the communities are identified and given roles to play in the debate of issues regarding water and sewerage provision. This will improve participation and understanding by community members since they would feel included in decisions that affect them. The platform can be used to attract divergent views about how to improve service provision as well as gaining trust from the residents. Since the financial resources of the Department are constrained, it would be wise to engage the Provincial Government for additional funding of some projects.

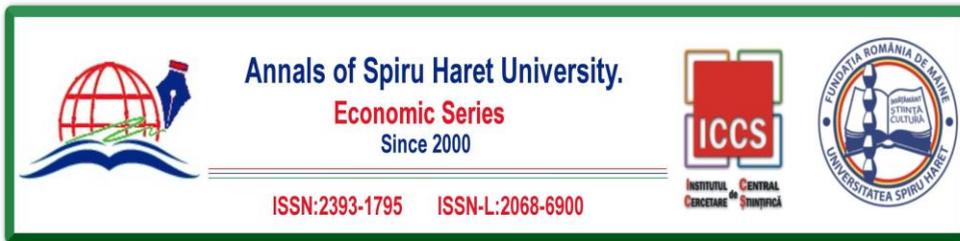
References

- [1] Alence, R. (2002). *Development Southern Africa*, 19: 700-715.
- [2] Alence, R. (2002). "Sources of Successful Cost Recovery for Water: Evidence from a National survey of South African Municipalities," *Development Southern Africa*, 19(5): 12.
- [3] Auditor-General Report. 2018. Media release. <http://www.agsa.co.za/Portals/0/Reports/MFMA/201617/Media%20Release/2016%20-17%20MFMA%20Media%20Release.pdf?ver=2018-05-23-082131-353>



Issue 2/2021

- [4] Bekink, B. (2006). *Municipal services and service delivery and the basic functional activities of municipal governments*. University of Pretoria. <https://repository.up.ac.za/bitstream/handle/2263/30097/16chapter16.pdf?sequence=17>
- [5] Bogdan, R.C. & Biklen, S.K. (1998). *Qualitative Research for Education. An Introduction to Theory and Methods*. United States of America: Allyn and Bacon.
- [6] Booysen, F le R. (2001). "Non-Payment of Services: A Problem of Ability to Pay." *The South African Journal of Economics*. 69(4):674-697.
- [7] Cai, X.M., Rosegrant, M.W. & Ringler, C. (2003). "Physical and economic efficiency of water use in the river basin: implications for efficient water management – art. No. 1013." *Water Resources Research*, 39(1), 1013.
- [8] Chetty, M. (2015). *An Integrated Debt Management Model for Municipalities in the Free State Province*. Doctorate Thesis. Faculty of Management Sciences. Central University of Technology. Free State. <http://ir.cut.ac.za/handle/11462/1161>
- [9] Denzin, N.K. & Lincoln, Y.S. (2005). *The Sage Handbook of Qualitative Research*. London Sage.
- [10] DWAf, (2006). *Injects free basic water roll out with new vigour*. Department of Water affairs and Forestry. {White Paper}.
- [11] Fjeldstad, O. (2004). "What's trust got to do with it? Non-payment of service charges in local authorities in South Africa." *J. of Modern African Studies*, 42, 4 (2004), pp. 539–562. <https://www.cmi.no/publications/file/1792-whats-trust-got-to-do-with-it.pdf>
- [12] Gadgil, A. (1998). "Drinking water in developing countries." *Annual Review of Energy and Environment*, (23), 253-286.
- [13] Hamdy, A., Ragab, R. & Scarascia-Mugnozza, E. (2003). "Coping with water scarcity: water saving and increasing water productivity." *Irrigation and Drainage*, 52, 3-20.
- [14] Kanyane, M. (2014). Exploring Challenges of Municipal Service Delivery in South Africa (1994 – 2013). <https://apsdpr.org/index.php/apsdpr/article/viewFile/45/44>
- [15] Kawulich, B.B. (2005). "Participant Observation as a Data Collection Method." *Forum: Qualitative Social Research*. Volume 6, No. 2, Art. 43 – May 2005. [http://home.sogang.ac.kr/sites/kylee/Courses/Lists/b6/Attachments/21/Participant%20bervation%20as%20a%20Data%20Collection%20Method%20\(2005\).pdf](http://home.sogang.ac.kr/sites/kylee/Courses/Lists/b6/Attachments/21/Participant%20bervation%20as%20a%20Data%20Collection%20Method%20(2005).pdf)
- [16] Kyessi, A.G. (2005). "Community-based urban water management in fringe neighborhoods: the case of Dares Salaam, Tanzania." *Habitat International*, 29(1), 1-25.
- [17] MacMillan, J.H. & Schumacher, S. (2006). *Research in Education: Evidence-Based Inquiry 6th edition*, Pearson Education, Inc., Boston.
- [18] Mantzaris, E. (2014). "Municipal financial management to fight corruption and enhance development. A holistic approach." *African Journal of Public Affairs* Volume 7 number 2. https://repository.up.ac.za/bitstream/handle/2263/58122/Mantzaris_Municipal_2014.pdf?sequence=1



Issue 2/2021

- [19] Matibane, L. (2010). *Improving service delivery through partnerships between Local Government, Civil Society and the Private Sector: A case study of Imizamo Yethu*. Masters Thesis. Stellenbosch University. Western Cape. <http://scholar.sun.ac.za/handle/10019.1/5253>
- [20] Mdlongwa, E.T. (2014). *Local government at the heart of poor service delivery*. <http://psam.org.za/research/1460540011.pdf>
- [21] Morudu, H.D. (2017). "Service delivery protests in South African municipalities: An exploration using principal component regression and 2013 data." *Cogent Social Sciences*. <https://www.cogentoa.com/article/10.1080/23311886.2017.1329106.pdf>
- [22] Muller, M., Schreiner, B., Smith, L., Koppen, B., Sally, H., Aliber, M., Cousins, B., Tapela, B., Merwe-Botha, M., Karar, E., & Pietersen, K. (2009). Water security in South Africa <https://www.dbsa.org/EN/About-Us/Publications/Documents/DPD%20No12.%20Water%20security%20in%20South%20Africa.pdf>
- [23] OECD (2011). *Meeting the Challenge of Financing Water and Sanitation: Tools and Approaches*, OECD Studies on Water, OECD Publishing.
- [24] OECD (2013). *OECD Economic Survey: South Africa 2013*, OECD Publishing. http://dx.doi.org/10.1787/eco_survey-zaf-2013-en.
- [25] Pieters, N.N. (2015). *Evaluating Revenue Collection and Allocation Challenges Faced by Ndlambe Local Municipality (Eastern Cape Province)*. Masters Thesis. Department Of Public Administration. Fort Hare. Eastern Cape. <http://libdspace.ufh.ac.za/bitstream/handle/20.500.11837/472/PIETERS%20Research%20Report.pdf?sequence=1&isAllowed=y>
- [26] Saunders, M., Lewis, P. & Thornhill, A. (2003). *Research methods for business students*. Harlow, England: Prentice Hall.
- [27] Saunders, M., Lewis, P. & Thornhill, A. (2012). *Research Methods for business students*. Harlow, England: Prentice Hall.
- [28] South Africa (Republic) (1996). *Constitution of the Republic of South Africa*, 1996, Government Printer, Pretoria.
- [29] Statistics South Africa (2016). The state of basic service delivery in South Africa: In-depth analysis of the Community Survey 2016 data. <http://www.statssa.gov.za/publications/Report%2003-01-22/Report%2003-01-222016.pdf>
- [30] The Citizen (2016). <https://citizen.co.za/news/south-africa/1095888/live-eff-manifesto-launch/>
- [31] USAID (2009). Environmental guidelines for small-scale activities in Africa: Chapter 19 water and sanitation.
- [32] Vhonani, D.S. (2010). Evaluating the Delivery of Water and Sanitation Services in the WCWDM Strategy. 2015/2016. <https://resource.capetown.gov.za/documentcentre/>



Issue 2/2021

Documents/City%20strategies,%20plans%20and%20frameworks/WCWDM_Strategy_doc.pdf

- [33] Ws Annual Report (2016/2017). Annual Water Services Development Plan Performance and Water Services Audit report. http://resource.capetown.gov.za/documentcentre/Documents/City%20research%20reports%20and%20review/WS%20Annual%20Report%202016_17.pdf
- [34] Yin, R.K. (2003). *Case Study: research design and methods*: Sage publication, California: Thousand Oaks.

