ASSESSMENT OF THE FACTORS THAT AFFECT THE GOVERNANCE OF WATER BOARDS IN SOUTH AFRICA

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ABSTRACT

The objective of the study was to explore and identify the factors that would ensure the effectiveness of the governance of water boards in South Africa. This was achieved by investigating the current governance of water boards and, inter alia, their linkages to the spheres of government where water services are in dire need. The study was carried out in all South African water boards (n=14) using a quantitative methodology. A random sample of 500 employees and board members was selected, of which 409 responded. The data collected were analysed using chi-square tests where frequencies and proportions for the responses were examined. Reliability and factorial analyses were also carried out to provide a more succinct and interpretable representation of the variables. This was done to ensure there was no possible effect of multi-collinearity and that the results are justifiable and reliable. The results of the reliability tests revealed that Cronbach alphas were more than 60%, which means that the results were deemed reliable. In addition, the results of the factorial analysis showed that three factors had a high cumulative loading value of 71.05%. Overall, the results of the study showed that out of eight factors, three were considered to have serious problems that could adversely affect the effectiveness of the water boards in South Africa. Should these factors be left unattended, the likelihood of a water crisis in South Africa becomes greater. The study therefore recommends that for water boards in South Africa to be more efficiently managed, special attention should focus on these three factors. The development of policies that may impact positively on the monitoring and evaluation of these factors would be the best option.

Keywords: governance, water board, management, effectiveness.
INTRODUCTION

The use of boards of directors as a governance mechanism has become increasingly common in the "new" or "modernised" public sector characterised by managerialism, marketisation and commercialisation (Vinnari & Nasi, 2013). Consequently, water sectors across the globe have tended to reform their operations to conform to semi-autonomous public companies and enterprises which are expected to operate more or less according to commercial principles (Guthrie et al., 2005; Pollitt & Bouckaert, 2004). Such hybrid organisations (Shaoul et al., 2012) are often governed by boards of directors to ensure the application of the corporate governance mechanism. Recent research has revealed that many African countries have undertaken broad reforms of public utilities in search of efficiency and cost reduction in public water supply service delivery (Kalulu & Hoko, 2010; Ndokosho et al., 2007). One of the notable reforms has been private sector participation which includes contracting multinational water companies to run water utilities (World Bank, 2003). Kalulu and Hoko (2010) reported that the water services sector in sub-Saharan Africa has suffered from the poor performance of its public water utilities for a long time.

The prominent problems in the region include water supply service coverage of less than 60% with high (40% – 60%) unaccounted for water usage (Schwartz, 2007). It was revealed that financial sustainability in sub-Saharan Africa has been a challenge. Water scarcity, deteriorating water quality, and limitations to the development of new water resources have adversely affected the quality of service in the region (Arntzen & Setlhogile, 2007; Vairavamoorthy et al., 2008). Although South Africa is largely affected by such problems, researchers (Mbuvi et al., 2012) reveal that its water utilities are the best performing (both effectively and efficiently) in Africa, followed by the water utilities in the East African and the West African utilities. This is despite the fact that water utilities are controlled by government-owned water boards (DWAF, 2014, Mwnagi and Daniel 2015). These boards are empowered through South African legislation which ensures that the dams, bulk water supply infrastructure, some retail infrastructure, and some wastewater systems are operational. The use of the water board’s model by the South African government was adopted from developed countries, such as Australia where these boards are empowered to control, regulate, operate, harvest water, distribute, and treat and dispose of waste, including storm water (Davies & Wright, 2014).

Unlike the developed countries where water boards models’ theories and competencies are clearly stated to ensure the effectiveness and efficiencies of the model, in South Africa, such competencies are not stated clearly in governance manuals and legislations. This lack of clearly stated governance key performance factors for the water boards may likely be associated with the water delivery crisis that has recently been evident in areas, such as Gauteng, Limpopo and the North West townships. The calls for competencies in the South African water boards are not only motivated by research findings that characterise South Africa’s water resources as globally scarce and limited but also by the growing water service demands as a result of population growth and rapid modernisation (Nare et al., 2011). The country is categorised as water stressed with an annual fresh water availability of less than 1 700 m³ per capita (Moriarty, 2001). Van Heerden et al. (2008) reveals that 59% of the water in South Africa is consumed by irrigation, followed by 10.2% used by households, 5.8% used by bulk users, and the remainder lost through evapotranspiration and seepages. Therefore, the management of South Africa’s water quality and availability is essential, making it critical for stakeholders, especially communities, to be involved in managing scarce
resources (Nare et al., 2011). This paper examines the factors which are necessary to ensure the effectiveness of the governance of water boards in South Africa.

Theoretical framework for water governance

Water in South Africa is regarded as one of the most important elements in the development and modernisation of its society in general (Hellberg, 2014). Thus, water service delivery (in terms of access and quality) is associated with a bio-political tool for the transformation of human life (Foucault, 1998). In addition, the South African constitution’s declaration of the right of everyone to have access to sufficient water is evident of its importance (RSA, 1996). Coupled with legislative theoretical frameworks, it is assumed that South Africa follows the global water governance theories established from corporate governance perspectives, such as agency, stewardship, and the resource dependence view theories (Vinnari & Nasi, 2013). However, this study has not found an official endorsement of these theoretical frameworks in the South African literature. These theoretical frameworks are described as a point of interest from the study perspective. The first theory, which is called agency theory, as outlined and advocated by Jensen (1986), and Jensen and Meckling (1976), appears to dominate corporate governance research, and it attempts to be separate from ownership and management in large corporations (Berle & Means, 1932).

This theory purports that the economic interests of the agent diverges from those of the principal consumers. Consequently, Vinnari and Nasi (2013) aver that this theory attempts to ensure that there should be the protection of the divergence of both agency and consumers. In the water sector, the principal consumers are members of society and the agency is represented by private sector interests. The second theory is the stewardship theory, as articulated by Donaldson and Davis (1991), and Muth and Donaldson (1998). It is premised upon behavioural assumptions derived from psychology and sociology (Vinnari & Nasi, 2013). According to this perspective, managers are not only motivated by their individual economic objectives but may rather be seen as stewards whose interests are aligned with those of the organisation (Vinnari & Nasi, 2013). However, this view is not in conflict with the idea of rational utility maximisation in the sense that such managers expect to gain greater utility from pro-organisational and collective behaviour than from the pursuit of purely personal gain (Vinnari & Nasi, 2013; Davis et al., 1997). Managers acting as stewards are motivated by a range of issues such as "the need for achievement and recognition, the intrinsic satisfaction of successful performance, respect for authority and the work ethic"(Muth & Donaldson, 1998).

In the absence of a conflict of interests, and provided that the managers are furnished with suitable intrinsic rewards, the boards of directors are not required to monitor the managers but to provide them with assistance and advice in matters related to successfully steering the organisation (Vinnari & Nasi, 2013). The third corporate governance theory, the resource dependency view (Pfeffer & Salancik, 1978), is founded upon the idea that organisations are dependent on their external environment for resources needed for sustaining operations. In order to acquire these resources, organisations need to create and maintain relations with other organisations and actors. This view suggests that board members be selected on the basis of their networks of useful contacts, providing management with access to resources and thus assisting the organisation in its attempts to respond to external demands (Vinnari & Nasi, 2013).
MATERIALS AND METHODS

Study location

The study was conducted in 14 water boards of the Republic of South Africa. These water boards are located in all nine provinces of the republic. The reason for their geographic spread was to ensure that the boards are strategically located in order to effectively account to national government. The size of the Republic of South Africa is estimated to be around 1 219 912 km² and its population is approximately 52 million (Statistics South Africa, 2012). The limitation of water in the country is influenced by the following: the lack of important arterial rivers or lakes requires extensive water conservation and control measures; the growth in water usage outpacing supply; the pollution of rivers from agricultural runoff and urban discharge, mining and industry; air pollution resulting in acid rain; and soil erosion and desertification.

Research aim and objectives

The aim of the study was to identify the factors which are necessary to ensure the effectiveness of the governance of water boards in South Africa. Its objective was to determine the factors that affect the governance of water boards. Hypothetical assumptions were developed in order to guide the conceptualisation and the analyses of the study. These hypotheses are as follows:

- \( H_0 \): The opinions of respondents in the study do not confirm the factors that are essential to effectiveness of governance of water boards in South Africa.
- \( H_a \): The opinions of respondents in the study do confirm the factors that are essential to effectiveness of governance of water boards in South Africa.

Data collection methodology

Secondary and primary data were used in this study. Secondary data were collected using published manuscripts (literature review), databases, government documents, and academic books. In addition, primary data were collected using face-to-face interviews with the help of structured questionnaires. A standard questionnaire was administered to various water management individuals. During data collection, participatory action research (PRA) was preferred over other research approaches as a result of its relative advantages. The use of PRA enabled the researchers to effectively use both qualitative and quantitative research techniques. The information derived from the qualitative research techniques was used mainly during the interpretation of the results, whilst the data derived from the quantitative research techniques were used in the presentation of the empirical results of the study.

Sampling methods

The stratified random sampling method was used in this study. The study population consisted of individuals employed and selected as board members (1 000) across 14 water boards. Sampling was limited to participants who agreed to participate in the study. Thus, the participant population number was not predetermined and is not the same across the 14 water boards sampled. The results of the sample composition are presented in Table 1.
### Table 1: Frequency distribution for respondents in the study

<table>
<thead>
<tr>
<th>Employment status</th>
<th>Count</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accounting authority</td>
<td>9</td>
<td>2%</td>
</tr>
<tr>
<td>Senior management</td>
<td>198</td>
<td>48%</td>
</tr>
<tr>
<td>Junior management</td>
<td>121</td>
<td>30%</td>
</tr>
<tr>
<td>Water expert</td>
<td>61</td>
<td>15%</td>
</tr>
<tr>
<td>Executive authority</td>
<td>20</td>
<td>5%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>409</strong></td>
<td><strong>100%</strong></td>
</tr>
<tr>
<td><strong>Missing</strong></td>
<td><strong>0</strong></td>
<td><strong>0%</strong></td>
</tr>
</tbody>
</table>

### Data analysis

Different data sets were analysed using different techniques and therefore, the outcome of the data analyses was used for a variety of study purposes. Descriptive and inferential analyses were conducted using the SPSS statistical software package. A descriptive analysis focused on the frequencies and proportions that describe the type of responses. These analyses led to the ranking of the factors under consideration. Inferential analyses were conducted in order to reflect the level of statistical significance. These analyses used the chi-square test for independence.

### Model specifications

The results of the chi-square tests were used to draw the inferences for the study. This is because the study measured the effectiveness of the water boards by comparing the responses from the participants in the study. The chi-square test was preferred for this analysis because the study used random sampling techniques. In addition, the sample size of the study was deemed adequate as every cell had a count of responses that was more than 5%.

The mean was not presented in the results of the study because the study used categorical variables. The formulas of the chi-square test in the study are presented and explained below:

\[ \chi^2 = \sum_{i=1}^{n} \left( \frac{N_i - \bar{N}}{\bar{N}} \right)^2 \]  

Where \( n \) = Number of measurements

\[ \bar{N} = \sum_{i=1}^{n} \frac{N_i}{n} \]  

Where \( \bar{N} = Mean \)
The frequencies of the responses and their proportions were presented and thus the formulas used in determining these frequencies are presented as follows:

\[ \chi^2 = \frac{(n_{yx} - n_{xy})^2}{n_{yx} + n_{xy}} \]...(3)

Where
\( \chi^2 \) = Chi-squared obtained
\( n_{yx} \) = row frequencies
\( n_{xy} \) = column frequencies

Both the expected and observed frequencies were presented in the results of this study and thus the formulas used to calculate them are presented as follows:

\[ \chi^2 = \sum_{i=1}^{r} \frac{(O_i - E_i)^2}{E_i} \]...(4)

Where
\( O \) = Observed frequencies
\( E \) = Expected frequencies

RESULTS AND DISCUSSION

The results of the Pearson correlation coefficients, reliability tests, and the factor analysis are presented in Table 2. According to these results, it is evident that the factors under consideration have both negative and positive correlations. The results also showed that the variables are not affected by multi-collinearity because the highest correlation coefficient observed in the results is less than 80\% \( \{r (409) = 0.667; p<0.05\} \). In terms of the reliability estimates, it is revealed that out of the eight \( (n=8) \) factors that were assessed, only three \( (n=3) \) factors were found to be more than 70\% reliable. In addition, it was also found that those factors that were below the reliability threshold were marginally below the threshold. This means that their reliability estimates were quite acceptable, with all the factors under consideration. The results of the factor analysis showed that three factors (WABN, WBRF and WBRR) had superior factor loadings in the model.

This appears to indicate that these factors are the most critical in determining the water board governance scenarios in South African water boards. Table 3 shows the results of the respondents on the factors that are likely to affect the governance of the water boards in South Africa. The results reveal that there is a significant difference at 5\% probability value in the opinions of the respondents across all five \( (n=5) \) factors under consideration. However, these results, if considered individually, show some interesting trends. Regarding the selection factors, the results reveal that the majority \( \{177(46\%)\} \) of the respondents agreed that selection criteria for water board members were based on the necessary skills acumen as compared to their counterparts \( \{134 (32.3\%)\} \). Assuming all things being equal, these results appear to indicate that quality assurance in selecting water board members was one of the critical considerations.
### Table 2: Correlation coefficients, reliability and factor analysis of the factors that affect the governance of water boards in South Africa

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
<th>(7)</th>
<th>(8)</th>
<th>Cronbach’s alpha</th>
<th>% of Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>WABN (1)</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.657</td>
<td>40.095</td>
</tr>
<tr>
<td>WBRF (2)</td>
<td>0.667</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.677</td>
<td>18.571</td>
</tr>
<tr>
<td>WBRR (3)</td>
<td>0.186</td>
<td>0.128</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.757</td>
<td>12.384</td>
</tr>
<tr>
<td>WBICR (4)</td>
<td>0.496</td>
<td>0.474</td>
<td>0.149</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.689</td>
<td>8.762</td>
</tr>
<tr>
<td>MMWB (5)</td>
<td>0.490</td>
<td>0.449</td>
<td>0.070</td>
<td>0.553</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td>0.661</td>
<td>8.268</td>
</tr>
<tr>
<td>PMWB (6)</td>
<td>0.553</td>
<td>0.492</td>
<td>0.091</td>
<td>0.428</td>
<td>0.798</td>
<td>1.000</td>
<td></td>
<td></td>
<td>0.649</td>
<td>6.187</td>
</tr>
<tr>
<td>WBAR (7)</td>
<td>−0.119</td>
<td>−0.090</td>
<td>0.061</td>
<td>−0.113</td>
<td>0.029</td>
<td>−0.009</td>
<td>1.000</td>
<td></td>
<td>0.761</td>
<td>3.899</td>
</tr>
<tr>
<td>WBFO (8)</td>
<td>0.039</td>
<td>−0.069</td>
<td>0.129</td>
<td>−0.124</td>
<td>−0.008</td>
<td>0.199</td>
<td>0.389</td>
<td>1.000</td>
<td>0.759</td>
<td>1.834</td>
</tr>
</tbody>
</table>

**KEYS:**
- **WABN** = Selection of water board members based on skills and acumen;
- **WBRF** = Water board members’ adherence to their strategic goals;
- **WBRR** = Water boards’ ability to recover their revenue;
- **WBICR** = Water boards’ enhancement of intergovernmental relations in the South African provincial government;
- **MMWB** = Municipalities’ understanding of the mandate of water boards;
- **PMWB** = Provincial governments’ understanding of the mandate of water boards;
- **WBAR** = Water boards’ audit records, and
- **WBFO** = Water boards’ use of their financial strategies to meet their obligations.

According to the results, opinions on the selection factors were found to be significantly different ($\chi^2 (4, N=409) = 83, p< 0.05$). Therefore, the null hypothesis for equal proportions in the responses for the selection criteria of water boards was rejected in favour of the alternative one. This may imply that there is a difference in the opinions on the selection of the water boards. However, this difference, although marginal, is statistically significant. In addition, the results reveal that compliance to selection criteria that satisfy the selection based on skills acumen in the water boards was ranked four (4) out of five factors. This implies that there is a need to improve the compliance in selecting board members based on skills acumen. The adherence of water boards to strategic goals was also investigated.
According to the results, the adherences to strategic goals were found to be the weakest point in the South African water boards and therefore were ranked five (5) out of five factors. Opinions regarding the adherence to strategic goals were found to be statistically different \(\chi^2 (4, N=409) = 119, p<0.05\). These results imply that out of 409 respondents only 139 (33.4\%) respondents agreed that water boards are delivering their services as per the set strategic goals. In view of the comparative analysis of those who agree (33.4\%) and those who do not agree (37.9\%), one can infer that water boards in South Africa have a challenge in implementing their strategic goals. Thus, these results may be symptomatic of the water crisis in South Africa. The respondents were asked whether water boards use their financial strategies to meet their obligations. The results indicated that out of 409 respondents, 311 (76\%) agreed that the water boards are adhering to their financial strategies. The study also found that the adherence to financial strategies by water boards were statistically significant \(\chi^2 (4, N=409) = 183, p<0.05\). Other controlling factors show that these results may lead to the inference that water boards in South Africa may be less likely affected by financial crises.

The study further examined the state of revenue collection of the water entities by asking the respondents to reflect on the ability of water boards to recover their revenue. According to the results, it was found that the majority (53.6\%) of the respondents were of the opinion that the water boards have the ability to collect their revenue. Similarly, the results of the ability to collect revenue were found to be statistically significant \(\chi^2 (4, N=409) = 128, p<0.05\). On the basis of these results, it may also be inferred that revenue collection for the water boards in South Africa is not a major challenge (assuming *ceteris paribus*). In relation to the state of water boards’ financial audit reports, the study found that 96\% of the respondents were in agreement that the financial audit records are in a good state. In the same vein, it was also found that the state of the water boards’ audit records were found to be statistically different as per the view of the respondents \(\chi^2 (4, N=409) = 480, p<0.05\). Overall, the results of the financial health of water boards and related policy adherence appear to show that the South African water boards are managing these factors as per the required norms and standards. This may imply that the financial environments of the water boards in South Africa are highly likely to be sustainable.

Table 3: Responses to the factors that affect the governance of water boards in South Africa

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>RESPONSES (N=409)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Strongly disagree</td>
</tr>
<tr>
<td>SELECTION</td>
<td>38 (9.3)</td>
</tr>
<tr>
<td>REGULATIONS</td>
<td>30 (7.3)</td>
</tr>
<tr>
<td>REVENUE</td>
<td>14 (3.4)</td>
</tr>
<tr>
<td>AUDIT REPORT</td>
<td>0(0)</td>
</tr>
<tr>
<td>FINANCIAL STRATEGIES</td>
<td>0(0)</td>
</tr>
</tbody>
</table>
Table 4 provides the results of factors that affect the governance of water boards at governmental level in South Africa. South African governance is divided into three levels: national, provincial and local governance. To promote corporate governance, intergovernmental relations amongst these governance levels are promoted through partnership and joint programmes. The study investigated whether water boards are taking advantage of these initiatives to promote water delivery in all the levels mentioned above.

In assessing the factors that play an important role in promoting the effectiveness of the water boards at governmental levels, three questions were asked to assess the respondents’ understanding of the mandate of the water boards in the various levels of governance. The questions whether water boards enhance intergovernmental relations were asked in order to find out whether the water boards are able to deal with the complexities of delivering water services across the governance levels. The study found that the majority (42.62%) of respondents agreed that water boards enhance intergovernmental relations as compared to 27.09% of the responses from the counterparts. These responses regarding the intergovernmental relations were found to be statistically different $\chi^2 (4, N=409) = 157, p<0.05$.

The results of the investigation on intergovernmental relations may imply that the activities of the water boards are most likely to enhance the intended purpose of the intergovernmental relations. All things being equal, these results may also indicate that water boards’ activities are highly likely to improve water service delivery regardless of both municipal and provincial boundaries. In addition, this may also signify the positive relationship between water boards and the national water fraternity in South Africa. The investigation regarding the understanding of the municipality mandate by water boards using the opinions of the respondents revealed that the majority (54.49%) of respondents are of the opinion that water boards have a fair understanding of what the municipalities require from them in as far as water service delivery is concerned.

The results of these responses were found to be statistically significant $\chi^2 (4, N=409) = 180, p<0.05$. Similarly, the results of the investigation regarding the understanding of the provincial mandate by water boards were supported by 48% of respondents, relative to 26.2% of the counterparts. Overall, the results of the study reveal that water boards in South Africa ranked the lowest in understanding the mandate of intergovernmental relations. This might be as a result of the complexities that surround the intergovernmental situation. The lack of intergovernmental policies that can be used as guidance may also add to the complexities. The results also show that water boards appear to understand the municipal mandate better than the provincial mandate, resulting in the higher rankings of the water boards’ understanding of the municipal mandate as compared to the provincial mandate. However, this was unexpected because the provincial governance level of South Africa was set up much earlier than the local municipality level.
Table 4: Responses to the factors that affect the governance of water boards at governmental level in South Africa

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>RESPONSES</th>
<th>N (%)</th>
<th>N (%)</th>
<th>N (%)</th>
<th>N (%)</th>
<th>N (%)</th>
<th>χ2</th>
<th>Df</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTERGOVERNMENTAL MANDATE</td>
<td>Strongly disagree</td>
<td>29(7.09)</td>
<td>82(20)</td>
<td>123(30)</td>
<td>152(37)</td>
<td>23(5.62)</td>
<td>157*</td>
<td>4</td>
<td>&lt;0.05</td>
</tr>
<tr>
<td></td>
<td>Disagree</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td></td>
<td>Agree</td>
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<tr>
<td></td>
<td>Strongly agree</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>MUNICIPALITY MANDATE</td>
<td>Strongly disagree</td>
<td>14(3.42)</td>
<td>84(21)</td>
<td>88(21)</td>
<td>176(43)</td>
<td>47(11.49)</td>
<td>180*</td>
<td>4</td>
<td>&lt;0.05</td>
</tr>
<tr>
<td></td>
<td>Disagree</td>
<td></td>
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<td></td>
<td>Agree</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>Strongly agree</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PROVINCIAL MANDATE</td>
<td>Strongly disagree</td>
<td>9(2.2)</td>
<td>97(24)</td>
<td>110(29)</td>
<td>134(34)</td>
<td>59(14.43)</td>
<td>117*</td>
<td>4</td>
<td>&lt;0.05</td>
</tr>
<tr>
<td></td>
<td>Disagree</td>
<td></td>
<td></td>
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<tr>
<td></td>
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CONCLUSION

The aim of the study was to identify the factors which are necessary to ensure the effectiveness of the governance of water boards in South Africa. In addition, the study’s objective was to determine the factors that may affect the governance of water boards. The preliminary results revealed that there were three factors { (selection criterion (WABN); adherence to strategic goals (WBRF); and revenue collection (WBRR)) that appeared to be important in the governance of the water boards of South Africa. The afore-said results indicated that these factors were the most critical factors in determining the water board governance scenarios of the South African water board institutions. From the empirical analysis presented in this study, it was revealed that there were some challenges in selecting candidates to represent water institutions in the water boards.

In this study, the results turn to suggest that there may be a need to improve on the capacity to select properly qualified board members based on clearly crafted membership requirements. This view stem from the findings on the adherence of water boards to strategic goals as per an investigation in this study. According to the results, it was found that the water board members had limited adherence to their strategic goals and this finding may imply that capacity in the water board representations is highly questionable. To improve the capacity of the water board membership, it may be necessary to ensure that the selection of its membership be strictly limited to highly experienced persons with technical water expertise and networks. Furthermore, the results of this study seem to suggest that erratic water crisis in various municipalities in South Africa may be as results of the inability to implement the strategic goals of the water boards and this may indicate the level of impairments of governance structures in the water institutions.

On the contrary, the results seem to portray the South African water boards’ institutions as strong in as far as financial strategies, auditing, and revenue collection are concerned. This may imply that the financial sustainability of the water boards in South Africa may be financially sound. In addition, the results also revealed that water boards appear to understand the municipal mandate better than the provincial mandate (a finding that seems to be absurd because the provincial governance level in South Africa was instituted much earlier than the local municipality one).
The study has serious policy implication to the water fraternity of South Africa. As result of the study findings, it is recommended that policies be developed to guide the selection, the adherence to the strategic goals, as well as revenue collections by water institutional governance. The latter may be helpful in ensuring the financial viability of the water entities in South Africa and therefore may impact positively in ensuring that the entities have disposable income that may be used to regularly maintain the water infrastructure in South Africa.

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