An assessment of the financial health of the South African metropolitan municipal regions

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Abstract

Local government in South Africa is in crisis, and the situation is getting worse. The majority of municipalities are experiencing serious issues, including poor service delivery, limited provision and maintenance of infrastructure and inadequate financial management. The measurement of municipal financial health is a growing research field, and several measurement tools have been developed over the last two decades. These existing indexes have not succeeded in comprehensively capturing the full extent of financial management in the local government sphere. The measurement of financial health is important in order to track and compare the performance of municipalities. The objective of this study was to apply the financial health index (FHI) as developed by the authors for all eight metropolitan municipalities in South Africa. This FHI focuses on four sub-indexes, namely income and expenditure, liquidity ratios, solvency ratios, and profitability ratios. The data of this FHI were obtained from the 2018/19 local government financial statements as published by the Auditor General. The main results of the study are that six of the eight metropolitan municipalities have improved their FHI with a relatively low average index of 60.1. The City of Cape Town has the highest FHI at 69.2, while the worst performing metro was Mangaung Municipality, with an FHI of only 51.0. The FHI has proven to be useful, not only in creating an index but also in identifying the main financial problems and assisting in the formulation of turnaround strategies for municipalities.

Key words

financial health, index, metropolitan municipalities, South Africa.

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Introduction

The overall management of the local government sphere in South Africa remains a major problem in that country, both from a financial and a service delivery point of view (Managa, 2012; Ababio and Asmah-Andoh, 2017). Local government faces several challenges such as financial management problems, capacity shortages, service delivery issues, political conflicts, maladministration, and substandard planning (Kanyane, 2014; Meyer et al., 2016; Teles and Schachtebeck, 2019). Financial problems spill over into financial capabilities and financial management. Local municipalities follow specific rules and protocols as indicated by numerous legislation and policies, such as the Municipal Systems Act (Act 32 of 2000) and the Municipal Finance Management Act (Act 56 of 2003) (Republic of South Africa, 2021a, b).

Although these policies and legislation aim to provide local government with the necessary processes and guidelines, most municipalities are under severe pressure both financially and from an organisational point of view (Glasser and Wright, 2020). Financial management is one aspect that local governments have been battling with over the past few decades. The financial obstacles include significant debt overload, unskilled financial managers and executives, inadequate revenue collection and significant amounts of fruitless and wasteful expenditure (South Africa, 2019).

In a media release published by the Auditor-General on 1 July 2020, it was stated that the financial health of local government is in a disastrous state (Auditor-General, 2020). The Auditor-General report indicated that a mere 18% (50 municipalities) out of the 278 municipalities provided financial statements without any material representations. The key factors that indicated the poor financial health of local government included the substandard quality of financial statements, a significant increase in irregular, fruitless and wasteful expenditure and restricted compliance with supply chain management implementation (Auditor-General, 2020).

This study aims to compile a comprehensive Financial Health Index (FHI) for metropolitan municipalities in South Africa. The study uses a previous study by the authors in which an FHI was formulated and tested (Neethling and Meyer, 2019). The index with its various elements and sub-elements is utilised in a quantitative method. This FHI can be used to identify high-risk areas of local government health. The index includes sub-indexes such as liquidity ratios, profitability ratios, income and expenditure ratios, and solvency ratios. The application of the FHI can be used as a tool for measuring financial health and to identify grey areas of financial indicators while providing valuable intuition on key financial outcomes of metropolitan municipalities in South Africa.

1. Theoretical background

1.1. Overview of existing financial health studies

For decades now, researchers such as Tkáčová and Konečný (2017) and Clark (2015) have attempted to develop measurement and indexes for municipal financial health. From a theoretical perspective, the measurement of financial health is based on different definitions. It could be based on the ability of a municipality to fulfil its financial obligations or on financial stability (Gorina et al., 2018). The use of financial ratios could assist with interpreting financial results (Bird, 2015; Łach, 2019). In terms of the analysis and measurement of municipal financial health, McDonald (2017) divides such assessments into four specific sections of analysis: complying with both long and short-term financial obligations; meeting budget year financial obligations; and the ability to plan and budget the minimum level of services required.

Cabaleiro et al., (2013) opine that local government financial health should be based on four critical factors: sustainability, flexi-

bility, viability, and vulnerability. The local government should have sustainable revenue sources and expenditure. The concept of flexibility focuses on ongoing financial performance, while viability relates to budgetary revenue and long-term debt (O'Neill, 2016). Vulnerability focuses on direct and indirect contributions. The authors developed an index based on ratios and factors such as long-term debt and revenues, long-term debt per capita, revenues divided by budget obligations, net savings, debt service divided by revenue, debt interest per capita, the ratio of budget revenue and grants received, direct and indirect taxes, and capital transfers per capita (Du Boys et al., 2017). According to ***Šebestová*** et al., (2018), the main aspects of financial health include revenue analysis, operating position, debt situation and unfunded liabilities. One also underlines the importance of ethics management in local self-government (Toleikiene and Jukneviciene, 2019).

Ritonga (2014) formulated a model for the financial conditions of local government in Indonesia. This index focuses on financial and environmental factors, including long- and short-term financial durability, budgetary solvency, financial sovereignty and flexibility. The model as formulated was termed the Financial Conditions Measurement Framework (FCMF). Said model has a shortcoming as factors or indicators are not easily accessible. Based on the FCMF as developed by Ritonga (2014), Kleynhans and Coetzee (2019) formulated a framework for application in South Africa. The framework used by Kleynhans and Coetzee focused on social factors and financial status. This study measured and evaluated a financial conditions management index (FCMI) and a composite financial conditions index (CFCI) for 43 municipalities in Kwa-Zulu Natal, South Africa. The study also applied an econometric model by evaluating the financial conditions in the municipalities.

Also in South Africa, Chitinga-Mabugu and Monkam (2013) investigated the financial and fiscal capacity of municipalities. The methodology included an evaluation of the capacity and situation with a focus on revenue volume, revenue attempts and the disbursement needs of municipalities. The main factors or indicators included in the assessment focused on financial management and economic development indicators such as national grants, capital expenditures, and municipal operating revenues. Ncube and Vacu (2013) also assessed financial and fiscal issues for municipalities in South Africa and included a quantitative scoring system for different fiscal environments, including fiscal neutral (0-5), fiscal watch (6-7) and fiscal distressed (8-11). The South African Cities Network (SACN) (2018) also assessed the financial health of municipalities in South Africa, focusing on the descriptive analysis of statistics on revenue, operating expenditure, borrowing, consumer debtors, cash management, and audit outcomes. Lehohla (2017), in a different study in South Africa, focused on the purchases of the different utilities, employee-related costs, and liquidity management ratios.

From the analysis and assessment of the literature on financial health studies, a shortcoming has been identified in the quantitative measurement of municipal health using an index. Best practice principles were selected from various studies as analysed. This study contributes to this research field in applying an index based on data that are available for municipalities in South Africa and on a global scale. This index approach makes it possible to compile an index for each municipality and then compare such outcomes. It is also possible to then compile a strategy to improve financial health based on the index with its sub-sections. The index is based on the most problematic factors in municipalities relating to their income and expenditure, profitability, solvency, and liquidity, and applied an improved approach to identifying key risk areas of the financial health of local governments.

1.2. The legislation of financial management for local government

In this section, the main pieces of legislation affecting municipal financial management are listed:

The Constitution of the Republic of South Africa, 1996: The Constitution states that local government consists of municipalities, each of which *"has the right to govern, on its initiative, the local government affairs of its community, subject to national and provincial legislation, as provided for in the Constitution"* (South Africa, 1996: 74). The baseline objective of all municipalities in South Africa is to provide essential services such as water, electricity, refuse removal and sanitation services. A secondary objective is providing an accountable and democratic government for communities and encouraging economic and social development (South Africa, 1996). In Chapter 7 of the Constitution (South Africa, 1996), it is stated that municipalities control and shape their budgeting and management of financial resources in such a way that the wants and needs of local communities are structured to elevate economic and social development and follow the rules and regulations as presented in the provincial and national programmes. Finances within local government are administrated independently, and municipal by-laws are administrated by each municipality (Fuo, 2017). The Constitution, therefore, gives broad guidelines on how municipal finances should be managed. Local government is the sphere closest to the local communities and has the mandate to implement national priorities and independently manage the municipal area regarding service delivery and financial management.

The Municipal Systems Act (Act 32 of 2000): This act has been promulgated to improve the financial management and sustainability of municipalities. This act provides the foundation for other financial management acts in South Africa, such as the Municipal Finance Management Act (MFMA) (Act 56 of 2003). The act attempts to facilitate all municipal operations and focuses on municipal services by protecting the financing of the specified services, operating costs, and initial capital disbursements (South Africa, 2000).

The Municipal Finance Management Act (MFMA) (Act 56 of 2003): This act is the foundation of legislation and regulations on the financial management of local government in South Africa. The MFMA included all the predominant legislation needed to apply constructive financial management practices for municipalities (South Africa, 2003). The key to financial management in the local government sphere is to set financial objectives followed by planning, carrying out the financial plans, comparing it to the actual plan, establishing the objectives and redesigning the policy objectives (Botlhoko, 2017). According to the Act, financial management in municipalities should be adopted in such a way that it can safeguard the resources of municipalities efficiently and effectively while maintaining effective and explicit structures for risk and financial administration; exercising internal audits with the stipulated quality and standards; controlling irregular, fruitless and uncertified disbursement, and other supplemental losses (South Africa, 2003). Therefore, the objective of the MFMA is to establish public finances so as to facilitate financial growth and development while maintaining a degree of accountability. Financial management systems are the foundation for liability, transparency, effective and efficient service distribution in all municipal entities in South Africa (Mantzaris, 2014).

1.3. An overview of the South African metropolitan municipalities

Figure 1 illustrates the localities of the eight metropolitan municipalities in South Africa, which include the City of Johannesburg (Gauteng), the City of Cape Town (Western Cape), the City of Tshwane (Gauteng), Ekurhuleni Metro Municipality (Gauteng), City of eThekwini (Kwa-Zulu Natal), Nelson Mandela Metro Municipality (Eastern Cape),

Mangaung Municipality (Free State) and Buffalo City (Eastern Cape) (South Africa, 2020). The City of Johannesburg is one of the smallest metropolitan municipalities in terms of area (km²); however, it has the highest population density of all metropolitan municipalities in South Africa.

Figure 1. The eight metropolitan municipalities in South Africa

Source: Turok and Borel-Saladin, 2014

Table 1 is an illustration of the demographic and selected economic development indicators. In terms of GDP per capita, total disposable income, population size, and population density, the City of Johannesburg can be considered the largest metropolitan municipality in South Africa. The City of Cape Town and the City of Tshwane are the second and third largest metros in South Africa, while the two smallest metros in South Africa, namely Mangaung Municipality and Buffalo City, are situated in the Free State and Eastern Cape.

Table 1. Demographic and Economic Development Indicators

Metropolitan Municipality	GDP per capita (constant prices)		% change	Total disposable income (Constant prices)		% change	Pop. size	Pop. density
	2018	2019		2018	2019			
City of Johannesburg (JHB)	91 412	90 970	-0.48%	251 662	256 858	2.06%	5 738 536	3 488
City of Cape Town (CPT)	72 205	71 058	-1.59%	207 739	208 894	0.56%	4 488 545	1 835
City of Tshwane (TSH)	91 810	89 992	-1.98%	184 580	186 194	0.87%	3 649 052	579
Ekurhuleni Metro Municipality (EKU)	59 000	57 357	-2.86%	157 415	158 303	0.56%	3 888 873	1 968

Metropolitan Municipality	GDP per capita (constant prices)		% change	Total disposable income (Constant prices)		% change	Pop. size	Pop. density
	2018	2019		2018	2019			
City of eThekwini (ETH)	77 545	76 722	-1.06%	147 381	147 680	0.20%	3 890 001	1 697
Nelson Mandela Metro Municipality (NMA)	63 739	64 169	0.67%	52 170	53 212	2.00%	1 207 487	616
Mangaung Municipality (MAN)	75 941	76 176	0.31%	34 249	34 513	0.77%	858 975	136
Buffalo City (BUF)	52 938	52 644	-0.01%	30 299	30 816	1.71%	800 088	315

Source: Quantec Easy Data, 2020.

Laubscher (2012) states that the biggest challenges in local government are the deficiency of knowledge, the incapacity to acquire consumer debt in default, and excessive spending on employee-related costs. Laubscher (2012) also acknowledges the ramifications of consistent financial mismanagement as a factor hindering effective service delivery within a municipality. In their annual report of the 2017/18 financial year, the National Treasury indicated that metropolitan municipalities overspent their operating budgets by less than one per cent (R1.5 billion), which is a modest expansion of 0.4 per cent (R838 million). The total number of debtors rose from 35% in the 2016/17 financial year to 37% in the 2017/18 financial year, meaning that metropolitan municipalities struggle to collect sufficient debt to cover their expenditure. A report by the National Treasury (2019) indicated that none of the metropolitan municipalities in South Africa encountered unqualified audit opinions. The overall audit report of the National Treasury (2019) indicated that a significant number of the metropolitan municipalities' financial conditions diminished slightly; this constitutes a problem which needs to be addressed.

2. Methodology

The methodology utilised in this study is based on a study by Neething and Meyer (2019), in which an FHI was developed and tested. This FHI is used to develop FHI for the metropolitan municipalities in South Africa. The study is a quantitative study proposition which consists of secondary data. The index comprises four main sub-indexes and 13 indicators. The research design comprised of a mixed-method approach including both qualitative and quantitative elements. The qualitative part of the study comprises the evaluation of reformed literature from different sources while pinpointing the most relevant financial health index (FHI) for metropolitan municipalities. The quantitative part of the paper will focus on practical extraction and evaluation of the 2018/19 financial statements as published by the Auditor-General (National Treasury, 2019). Numerous indexes have been utilised to illustrate the financial health of an institution. This specific FHI focuses specifically on local government in South Africa. As Neethling and Meyer (2019) described, the FHI consists of four sub-indexes to measure the performance of financial management in local government. The sub-indexes can further be divided into 13 indicators: solvency ratios, cash-flow ratios, profitability ratios, and income ratios. The index is utilised within each component i.e. sub-indexes 1, 2, 3 and 4, and graded from zero (0) to five (5), meaning a higher score, i.e. closer to five, will positively influence the final score at the end of the study measurement.

The data for the financial index were acquired by extracting data from the National Treasury (2020) and forming part of the MFMA (Municipal Financial Management

Act). The annual Audited Financial Statements are published by the Auditor-General (AG) and include the Income Statements (IS) or Statement of Financial Performance, and the Balance Sheet (BS) or Statement of Financial Position. The population sizes of the metros were also required in order to calculate some indicators which are part of the income and expenditure ratios; these data were obtained from Quantec Easy Data (2020).

Sub-index 1: Income and Expenditure Indicators (IEI)

Expenditure and income ratios are the first sub-category of the FHI and focus extensively on revenue and spending both as a municipal entity and per capita.

Indicator 1.1: Total income per capita

The total income per capita is calculated by adding the total amount of both incomes from trade proceedings and income from non-trade proceeding transactions, which are then divided by the total population size of the metro and eliminates the capital proceedings (Cabaleiro et al., 2013).

$$Total\ income\ per\ capita = \frac{Total\ Income\ (IS)}{Total\ population\ size\ (Quantec)}$$

Indicator 1.2: Total income per capita growth rate

The total income per capita growth rate is utilised to differentiate income collection growth from one financial year to another (Acemoglu et al., 2010). Chitiga-Mabugu and Monkam (2013) explain that the higher the growth rate in terms of income collection, the better the financial health of the metro will be.

$$Total\ income\ per\ capita\ growth\ rate\ IS = \frac{Total\ income\ per\ capita\ 2018\backslash 19 - Total\ revenue\ per\ capita\ 2017\backslash 18}{Total\ Revenue\ per\ capita\ 2017\backslash 18} \times 100$$

Indicator 1.3: Total spending per capita

The total spending per capita is similar to the total income per capita; however, in this calculation, the total spending is divided by the population size (Ncube and Vacu, 2013). McDonald (2017) states that the calculation is based on all the expenditure categories obtained from the income statement divided by the population size for that specific financial year.

$$Total\ spending\ per\ capita = \frac{Total\ Spending\ (IS)}{Total\ population\ size\ (Quantec)}$$

Indicator 1.4: Total spending per capita growth rate

Increasing expenditure per capita growth rate can either be an acceptable matter or an unfortunate event. The total spending per capita growth rate should always be in line with the total income per capita growth rate. Whenever the total expenditure per capita growth rate exceeds the total income per capita growth rate, the metro is spending more than it should without considering its service obligations.

$$Total\ spending\ per\ capita\ growth\ rate\ IS = \frac{Total\ spending\ per\ capita\ 2018\backslash 19 - Total\ spending\ per\ capita\ 2017\backslash 18}{Total\ spending\ per\ capita\ 2017\backslash 18}$$

Indicator 1.5: Service obligation (operations ratio)

The service obligation, also known as the operations ratio, can be defined as the total revenue of the municipality in relation to its total expenditure (Zorn et al., 2018). The objective of this ratio is to evaluate whether the annual income of a metro was sufficient to cover the costs of its annual operations. Hill et al. (2010) explain that a ratio equal to or higher than one means that the metro can cover its spending with its available income.

$$Service\ obligation\ (operations\ revenue) = \frac{Total\ Income\ (IS)}{Total\ Spending\ (IS)}$$

Indicator 1.6: Inter-governmental income as a percentage of total income

The objective of this ratio is to indicate the percentage of income received from provincial and national governments consistent with the total income of the metro (Dye, 2008).

$$Intergovernmental\ income\ as\ \%\ of\ total\ revenue = \frac{Transfer\ revenue\ (Grants\ and\ subsidies)\ (IS)}{Total\ Revenue\ \ (IS)} \times 100$$

Indicator 1.7: Employee-related costs

Much like intergovernmental income as a percentage of total income, the employee-related costs indicator measures the percentage of spending on employee salaries and wages in relation to the total expenditure. The higher the ratio, the more the municipal entity spends on employee remuneration concerning other important expenditure categories.

$$Employee - related\ costs\ = \frac{Employee{-}related\ costs\ (IS)}{Total\ Expenditure\ (IS)} \times 100$$

Indicator 1.8: Irregular, fruitless, wasteful and unauthorised spending as a percentage of total operating expenditure

The objective of the indicator of irregular, fruitless, wasteful and unauthorised spending as a percentage of total operating expenditure is to indicate the proportion of total expenditure allocated to irregular and fruitless spending. Irregular and fruitless expenditure is usually found in the notes to the annual financial statements.

$$Irregular, fruitless\ and\ wasteful\ expenditure\ = \frac{Irregular\ expenditure - written\ off\ (notes)}{Total\ Expenditure\ (IS)} \times 100$$

Table 2. Income and expenditure sub-category and scoring criteria

Index score	0	1	2	3	4	5
Total income per capita (R)	Less than R2000	R2000 – R4999	R5000 – R7999	R8000 – R10999	R11000 – R13999	Above R14000
Total income per capita growth rate (%)	Less than 0%	0.1 – 2.5%	2.6 – 5.0%	5.1 – 7.5%	7.6 – 10%	Above 10%
Total spending per capita (R)	Less than R2000	R2000 – R4999	R5000 – R7999	R8000 – R10999	R11000 – R13999	Above R14000
Total spending per capita growth rate (%)	Less than 0%	0.1 – 2.5%	2.6 – 5.0%	5.1 – 7.5%	7.6 – 10%	Above 10%
Service obligations (ratio)	<0.00 – 0.70	0.71 – 0.8	0.81 – 0.9	0.91 – 1.0	1.1 – 1.2	Above 1.2

Index score	0	1	2	3	4	5
Intergovernmental revenue as a percentage of total revenue (%)	Above 38%	30 – 37.9%	22.6 – 29.9%	15 – 22.5%	7.6 – 14.9%	0 – 7.5%
Employee-related costs (%)	Above 38%	30 – 37.9%	22.6 – 29.9%	15 – 22.5%	7.6 – 14.9%	0 – 7.5%
Irregular, fruitless and wasteful expenditure as a percentage of total operating expenditure (%)	Above 38%	30 – 37.9%	22.6 – 29.9%	15 – 22.5%	7.6 – 14.9%	0 – 7.5%

Source: Own elaboration

Sub-Index 2: Liquidity Ratios (LR)

The next sub-category involves examining the liquidity ratios, which include the technique by which the municipal entity has the magnitude to deliver both its short-and long-term adherence. Therefore, liquidity ratios aim to examine how these municipal entities can repay their debt with the existing assets. The following liquidity ratios are utilised in the study:

Indicator 2.1: Current ratio

Hantono (2018) explains that the current ratio is calculated by dividing the entities' current assets, i.e. inventories, VAT receivables and receivables from exchange transactions, by its current liabilities, i.e. loans, lease obligations, and consumer deposits. The higher the ratio, the quicker the municipal entity can meet its short-term obligations (Henry et al., 2012). When the ratio is higher than one, it is suggested that the organisation's assets are more significant than its overall liabilities, and the municipality will be able to pay off its obligations faster.

$$Current\ ratio = \frac{Current\ Assets(BS)}{Current\ Liabilities(BS)}$$

Indicator 2.2: Quick Ratio (Acid Test Ratio)

The quick ratio, also known as the Acid Test Ratio, is utilised in the same way as the current ratio. However, inventories are deducted from current assets (Ukwueze and Ohagwu, 2020). A high ratio obtained from this test enables the municipal entity to know how much they can spend on their current account, excluding prepayments and VAT receivables (Eriotis et al., 2007). The higher the ratio, the quicker the entity is capable of meeting its short-term commitments.

$$Quick\ ratio = \frac{Current\ Assets - Inventories\ (BS)}{Current\ Liabilities\ (BS)}$$

Table 3. Liquidity ratio and sub-category and scoring criteria

Index score	0	1	2	3	4	5
Current Ratio	0 – 0.499	0.5 – 0.899	0.9 – 1.299	1.3 – 1.699	1.7 – 1.999	Above 2
Quick ratio (Acid test ratio)	0 – 0.399	0.4 – 0.799	0.8 – 1.199	1.2 – 1.599	1.6 – 1.999	Above 2

Source: own elaboration.

Sub-Index 3: Solvency Ratios (SR)

The third sub-index is the solvency ratio which signifies the organisation's capability to meet its long-term commitments (Efendi et al., 2019). Solvency ratios, therefore, evaluate the entities propensity in the long term, which include all the long-term debt. The following solvency ratios were adopted in the study:

Indicator 3.1: Debt-to-worth ratio

The debt-to-worth ratio, also known as the debt-to-equity ratio, is utilised to follow the organisation's capital formation (Efendi et al., 2019). The objective of the debt-to-equity ratio is to evaluate the organisation's ability to cover debt and other beneficiaries. The debt-to-worth ratio should always be low because a high ratio indicates that more of its funds should be utilised to finance its operations. Therefore, the ratio indicates the inclination of all the equity shareholders against unsettled debt on the presumption of an organisational failure.

$$Debt - to - Worth = \frac{Total\ Debt(BS)}{Total\ net\ Worth(BS)} \times 100$$

Indicator 3.2: Total-debt-to-total assets

The debt ratios are measured in various ways, i.e. short-term, medium-term, and long-term debt (Kebewar, 2012). The objective of this ratio is to calculate the total debt (both short- and long-term) divided by the total assets, which indicates the volume of existing assets being capitalised through its total liabilities (Yuan and Motohashi, 2008). The higher the total-debt-to-total-assets ratio, the more the municipal entity needs to fund the equitable matters, so ultimately the objective is to have a lower total-debt-to-total-assets ratio.

$$Total - debt - to - total - assets = \frac{Total\ Debt\ (BS)}{Total\ Assets\ (BS)} \times 100$$

Table 4. Solvency ratio and subcategory and scoring criteria

Index score	0	1	2	3	4	5
Debt-to-worth ratio	Above 1.5	1.2 – 1.499	0.9 – 1.199	0.6 – 0.899	0.3 – 0.599	0 – 0.299
Total-debt-to-total-assets	Above 1.5	1.2 – 1.499	0.9 – 1.199	0.6 – 0.899	0.3 – 0.599	0 – 0.299

Source: own elaboration.

Sub-Index 4: Profitability Ratios (PR)

The fourth and final subcategory contains the profitability ratios based on the municipal entity's ability to attain the necessary profit from its existing resources.

Indicator 4.1: Return-on-equity

Return-on-equity (ROE) is a ratio mostly used to interpret entities' total operating profit and comprehensive equity. The objective of this ratio is to stipulate the return of equity after principal debt and interest charges (Khadafi et al., 2014). The higher the return of equity is, the more the organisation will profit from the organisation's existing equity.

$$Return - on - equity = \frac{Net\ income(BS)}{Total\ assets - Total\ Liability(BS)}$$

Table 5. Profitability ratio and subcategory and scoring criteria

Index score	0	1	2	3	4	5
Return-On-Assets	< 0.00	0 – 0.05	0.06 – 0.10	0.11 – 0.16	0.17 – 0.18	Above 0.18

Source: own elaboration

Coordination and weighing structure

Any index should be merged and presented in accordance with the fundamental philosophical arrangement, which in turn should be in line with the literature foundation (OECD, 2008). The Organisation of Economic Co-operation and Development (OECD) stipulates that this proposition is dependent on an equal weighting (EW) technique, whereby most variables are established with the same weight (OECD, 2008). Each indicator of the sub-indexes is subjected to its weighing structure, as illustrated by the content of the literature review. All the indicators used in this study are given the same weight due to the limited factual and statistical basis, e.g. limited insight into the relationships between the variables. The FHI is based on a ranked scoring indicator i.e. 0 (inferior score) and 5 (remarkable score). The objective for a metropolitan municipality is to obtain the highest possible score for each indicator in the sub-index so as to obtain the highest overall score.

3. Results and analyses

Table 6 illustrates the comparative analyses of the eight metropolitan municipalities in South Africa for both the 2017/18 and 2018/19 financial years. All the financial indicators were acquired from the audited financial statements of the National Treasury for both the 2017/18 and 2018/19 financial years. Overall, concerning the FHI, the average index for all the metros improved from 54.5 in the 2017/18 financial year to 60.1 in 2018/19. Only two of the eight metros, namely the Ekurhuleni Metro Municipality (Gauteng) and the City of eThekwini (Kwazulu-Natal), presented declining financial health conditions compared to the previous financial year. The City of Cape Town achieved the highest FHI ranking of 69.2, followed by the City of Tshwane and Ekurhuleni Metro Municipality, which are both situated in Gauteng province. The metro that performed the worst was Mangaung Municipality, situated in the Free State province, with a FHI of only 51.0. The metro that improved the most from 2017/2018 to 2018/2019 was the City of Johannesburg, which improved by 11.0 index points from 49.0 to 60.0.

In terms of sub-index 1: income and expenditure ratios, the City of Tshwane and Ekurhuleni Metro Municipality achieved the most significant scores of 29 and 28 respectively out of a maximum of 40. This means that these two municipalities have the highest levels of revenue and expenditure per capita, indicating significant revenue and expenditure growth rates. In terms of government grants and subsidies, the City of Cape Town and City of eThekwini had the highest scores, which means they are less dependent on government grants for operating expenditure. The metro with the lowest employee-related costs is the Ekurhuleni Metropolitan Municipality with only 25% of total expenditure, which is in contrast to the City of Cape Town with 33.87%. The metro which obtained the best score in terms of irregular, fruitless, wasteful and unauthorised spending as a percentage of total operating expenditure is the City of Cape Town (1.88%) which is in contrast to Buffalo City, situated in the Eastern Cape (41.30%).

Sub-index 2: liquidity ratios indicated that the City of Cape Town performed the best, meaning that they can meet their short-term obligations more adequately than the oth-

er metros, while Mangaung Municipality in the Free State showcased the worst liquidity ratios of all the metros. Interestingly enough, in terms of sub-index 3: solvency ratios, the Buffalo City showcased the best results in terms of debt-to-worth and total debt to total assets, the reason being that their total debt is significantly low compared to equity and total assets. The last sub-index, sub-index 4: profitability ratios, indicated that the City of Cape Town, the City of Tshwane and the City of Johannesburg had the highest ratios, meaning that these three metros are profitable while the other metros are loss-making institutions.

In summary, the Metropolitan Municipalities all achieved relatively low FHI ranging from 51.0 to 69.0. All the metros seem to be improving their financial situation, while only Ekurhuleni Metro Municipality in Gauteng and the City of eThekwini have moved backwards over the last two years. The main reasons why Ekurhuleni Metro Municipality declined during the period were an increase in total debt to total assets and deterioration in profitability. The City of eThekwini's financial situation deteriorated due to an increase in irregular expenditure and an increase in debt-to-worth ratio.

Table 6. Comparative analysis of the Financial Health Index (FHI) in South African Metros for the 2017/18 and 2018/19 financial years

Indicator	City of Cape Town (WC)		City of Tshwane (GAU)		Ekurhuleni Metro Municipality (GAU)		City of Johannesburg (GAU)	
Sub-Index 1: Income and Expenditure ratios	**2017/18**	**2018/19**	**2017/18**	**2018/19**	**2017/18**	**2018/19**	**2017/18**	**2018/19**
Total revenue per capita (R)	8972 (3)	9505 (3)	9103 (3)	10529 (3)	8961 (3)	9437 (3)	8601 (3)	9638 (3)
Total revenue per capita growth rate (%)	0.7258 (1)	6.6684 (3)	3.7318 (2)	15.79 (5)	5.855 (3)	5.486 (3)	2.353 (1)	12.055 (5)
Total expenditure per capita (R)	7754 (2)	8114 (3)	8640 (3)	9509 (3)	8525 (3)	9636 (3)	8037 (3)	8440 (3)
Total expenditure per capita growth rate (%)	1.2354 (1)	6.5412 (3)	12.30 (5)	21.581 (5)	5.654 (3)	12.538 (5)	-0.729 (0)	5.018 (3)
Service obligation (ratio)	1.16 (4)	1.17 (4)	1.08 (4)	1.11 (4)	1.05 (4)	1.08 (4)	1.07 (4)	1.14 (4)
Government grants & subsidies to total revenue (%)	14.55 (4)	15.35 (3)	19.98 (3)	16.96 (3)	21.35 (3)	21.06 (3)	20.39 (3)	19.42 (3)
Employee-related costs	32.09 (1)	33.87 (1)	37.34 (2)	26.00 (2)	23.30 (2)	25.00 (2)	24.64 (2)	26.15 (2)
Irregular, fruitless and wasteful expenditure	0.83 (5)	1.88 (5)	11.48 (4)	9.15 (4)	6.11 (5)	5.88 (5)	11.70 (4)	15.20 (2)
Score out of 40	**21**	**25**	**26**	**29**	**27**	**28**	**20**	**25**
Sub-Index 2: Liquidity ratios								
Current ratio	1.70 (4)	2.02 (5)	0.82 (1)	1.04 (2)	1.21 (2)	1.06 (2)	0.78 (1)	1.07 (2)
Quick ratio (acid test ratio)	1.65 (4)	1.97 (4)	0.77 (1)	1.03 (2)	1.05 (2)	0.93 (2)	0.76 (2)	1.06 (2)
Score out of 10	**8**	**9**	**2**	**4**	**4**	**4**	**3**	4
Sub-Index 3: Solvency ratios								
Debt-to-worth ratio	0.33 (4)	0.46 (4)	1.05 (2)	0.96 (2)	0.37 (4)	0.44 (4)	0.91 (3)	0.80 (3)
Total debt to total assets	0.33 (4)	0.31 (4)	0.51 (4)	0.49 (4)	0.27 (5)	0.31 (4)	0.48 (4)	0.45 (4)
Score out of 10	**8**	**8**	**6**	**6**	**9**	**8**	**7**	**7**
Sub-Index 4 :Profitability								
Return-on-assets	0.08 (2)	0.13 (3)	0.10 (2)	0.13 (3)	0.03 (1)	0.00 (0)	0.06	0.13
Score out of 5	**2**	**3**	**2**	**3**	**1**	**0**	**2**	**3**
Total Score	**39/65 = 60%**	**45/65 = 69%**	**36/65 =55%**	**42/65= 65%**	**41/65 = 63%**	**40/65 = 62%**	**32/65=49%**	**39/65=60%**
Overall Trend	Improved		Improved		Deteriorating		Improved	

Table 6 (continued). Comparative analysis of the Financial Health Index (FHI) in South African Metros for the 2017/18 and 2018/19 financial years

Indicator	Buffalo City (EC)		Nelson Mandela Metro Municipality (EC)		City of eThekwini (KZN)		Mangaung Municipality (FS)	
Sub-Index 1: Income and Expenditure ratios	**2017/18**	**2018/19**	**2017/18**	**2018/19**	**2017/18**	**2018/19**	**2017/18**	**2018/19**
Total revenue per capita (R)	7970 (2)	9096 (3)	9063 (3)	9435 (3)	9248 (3)	9575 (3)	8183 (3)	8303 (3)
Total revenue per capita growth rate (%)	1.617 (1)	14.167 (5)	9.829 (4)	4.231 (2)	4.133 (2)	3.532 (2)	-9.289 (0)	1.466 (1)
Total expenditure per capita (R)	7571 (2)	8499 (3)	7342 (2)	8214 (3)	8711 (3)	9021 (3)	7958 (2)	8603 (3)
Total expenditure per capita growth rate (%)	0.775 (1)	12.327 (5)	-3.848 (0)	12.030 (5)	4.964 (2)	3.560 (2)	1.963 (1)	8.105 (4)
Service obligation (ratio)	1.05 (4)	1.07 (4)	1.23 (5)	1.15 (4)	1.06 (4)	1.06 (4)	1.03 (3)	0.97 (3)
Government grants & subsidies to total revenue (%)	28.51 (2)	26.37 (2)	26.94 (2)	27.70 (2)	15.47 (3)	14.98 (4)	26.75 (2)	26.24 (2)
Employee-related costs	30.33 (1)	30.14 (1)	31.74 (1)	31.42 (1)	28.73 (2)	29.85 (2)	27.38 (2)	27.68 (2)
Irregular, fruitless and wasteful expenditure	43.73 (0)	41.30 (0)	47.00 (0)	20.31 (1)	3.78 (5)	8.73 (4)	9.21 (4)	11.14 (3)
Score out of 40	**13**	**23**	**17**	**21**	24	24	17	21
Sub-Index 2: Liquidity ratios								
Current ratio	1.97 (4)	1.61 (3)	1.80 (4)	1.99 (4)	1.21 (2)	1.22 (2)	1.12 (2)	0.96 (2)
Quick ratio (acid test ratio)	1.94 (4)	1.59 (3)	1.73 (4)	1.94 (4)	1.15 (2)	1.17 (2)	0.87 (2)	0.77 (1)
Score out of 10	**8**	**6**	**8**	**8**	**4**	**4**	**4**	**3**
Sub-Index 3: Solvency ratios								
Debt-to-worth ratio	0.13 (5)	0.13 (5)	0.40 (4)	0.38 (4)	0.58 (4)	0.62 (3)	0.36 (4)	0.39 (4)
Total debt to total assets	0.11 (5)	0.36 (4)	0.29 (5)	0.28 (5)	0.37 (4)	0.38 (4)	0.27 (5)	0.03 (5)
Score out of 10	**10**	**9**	**9**	**9**	**8**	**7**	9	9
Sub-Index :Profitability								
Return-on-assets	0.02 (1)	0.00 (0)	0.13 (3)	0.00 (0)	0.05 (1)	0.05 (1)	0.02 (1)	-0.02 (0)
Score out of 5	**1**	**0**	**3**	**0**	**1**	**1**	1	0
Total Score	32/65=49%	38/65=59%	36/65=55%	38/65=59%	37/65=57%	36/65=55%	31/65=48%	33/65=51%
Overall Trend	Improved		Improved		Deteriorating		Improved	

Conclusion and recommendations

Measuring financial health at the local government level remains an important and continuous task in investigating the ability of local government to respond to developing conditions (Padovani and Scorsone, 2011). The evaluation of financial indicators remains a critical aspect of quality financial management and performance analysis within every organisation, no matter the size (Katone and Kuzimina-Merlino, 2012). Accountability and transparency in financial statements remain critical in improving municipal financial management practices (Botlhoko, 2017). The Municipal Finance Management Act, 2003 (Act 56 of 2003) remains the cornerstone of adequate local government financial management practices that illustrate financial management principles and includes appropriate guidelines such as organisation, budgeting, revenue management, expenditure guidelines, reporting, and reporting administration. Local government should always adhere to the principles and guidelines set out by this Act. Financial sustainability is not an exclusive problem inherited in financial management practices; it also includes various external aspects such as management, administration, and political apprehension (Dollery, 2009). Despite the various aspects that influence municipalities' financial well-being in South Africa, the best possible solution is to lay an adequate foundation to improve the effectiveness of public finances continuously.

The study aimed to apply an FHI, which assesses all the features of financial health within metropolitan municipalities in South Africa in a quantitative manner. Even though audit outcomes may differ from one institution to another, the objective is to assess local government in terms of its financial performances and positions using the four sub-indexes, including income and expenditure ratios, liquidity ratios, solvency ratios and profitability ratios with the existing audited financial statements. Adopting a universal FHI may be especially useful in identifying existing problems and possibly eradicating future financial issues.

The results indicated that most metropolitan municipalities' financial health is below average and that improvements are needed to turn the loss-making institutions into profitable entities. Overall, the metros showed some progression in financial health and the average combined index rose from 54.5% in the 2017/18 financial year to 60.1% in the 2018/19 financial year. The only metros in South Africa which scored 60% or higher were the City of Cape Town, the City of Tshwane, Ekurhuleni and Johannesburg. The following additional recommendations are listed based on the outcomes of this study:

- **Improved financial management and oversight:** Since only 18% of all the municipalities provided sufficient and adequate financial statements in 2020, there is a lack of adequate oversight and management. Regular oversight from both provincial and national government is needed to effectively monitor and regulate the financial performances of local government in South Africa.
- **Applying the MFMA procurement code of conduct in their financial systems:** The corruption levels in local government are very high which hinders adequate economic development and growth. All municipalities in South Africa must follow the MFMA code of conduct for administering supply chain management procedures in a fair and accurate manner.
- **Depending more on one's own revenue sources for financial sustainability:** Local government in South Africa should focus more on acquiring revenue from residents which will inadequately perfect the fiscal imbalances. Adequate effort from local government is needed to address the so called "culture of non-payments" by means of applying stricter

rules and regulations for non-payments of municipal accounts.

– **Improved asset management:** Sufficient asset management is needed within local government to achieve sustainability and operations of municipalities. Regular maintenance and repairs should also be executed to have an effective asset management system.

Future studies could undertake a re-assessment of the indicators included in the index and the possible weighting of indicators and sub-indexes. The index will also be tested on an international basis in developing and developed countries and results will be compared with the South African results. The implications and contribution of this study are that this index makes it possible to objectively track the financial performance of municipalities and also to identify possible weaknesses and threats to the future sustainability of municipalities. The index should be globally useful and could assist in strategic financial planning.

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