A continued struggle for deserving effective services in South African municipalities

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Abstract: The socioeconomic demography of a municipality impacts the delivery of services within its areas of jurisdiction. In the case of South African municipalities, this statement is evidenced by poverty, unemployment, and service delivery protests. This situation is observed from the perspective of community members, who are the end users of unsatisfactory services. From the municipal viewpoint, the lack of financial, human, and infrastructural resources contributes to ineffective service delivery. The fact remains that municipalities are failing to deliver on their mandate of effective and efficient service delivery. The lack of financial resources and economic viability remains challenging, as this inadequacy causes municipalities to incur debts. The lack of human resources is a challenge that demands capacity-building interventions to equip municipal personnel to deliver improved services. This article explores various municipal challenges identified in a qualitative study that conducted literature and document reviews to gather information. The information was analyzed through conceptual and document analysis. The findings confirm that municipalities require transformation. In terms of practical implications, a shift from traditional modes of operation is needed to implement electronic services (e-services), and municipalities must adapt to electronic governance and the Fourth Industrial Revolution (4IR) interventions to improve service delivery. This article concludes by proposing recommendations for improvement based on the literature review.

Keywords: E-services, Fourth industrial revolution, Municipalities, Qualitative, Service delivery, South Africa.

1. Introduction

Although the concept of developmental local governance is well known, with municipalities expected to find ways to achieve social and economic development, it is also essential for them to be equipped to deliver services effectively and efficiently. However, this vision has yet to be fully realised, and community members struggle daily to receive services that meet acceptable standards. These services include water, electricity, sanitation, and enhanced education and healthcare facilities.

It is easy to assess the situation retrospectively and attribute the challenges to historical imbalances. However, in a post-democratic context, various legislative frameworks and policies have been formulated and implemented to introduce strategic measures to improve service delivery. Therefore, while the historical context is important, it is equally crucial to assess the present context to identify persistent or newly emerging challenges that require interventions to improve service delivery at the grassroots level.

Additionally, municipalities need to adapt to new ways of delivering services that are feasible, quick, and seamless. This requires municipalities to adopt 4IR technologies, which is the way forward. Technology has integrated all institutional services in a coordinated manner, making them not time-bound or geographically restricted. Technology can enhance communication between the government and the community, allowing external and internal customers to collaborate to achieve better service

delivery in their respective areas of jurisdiction. Therefore, the South African local government must recognise and address its shortcomings. With the correct 4IR technologies, many municipalities can realise their full potential, but they still lack digital infrastructure, a trained workforce, and relevant resources. The local government can benefit from 4IR technologies once this challenge has been evaluated and addressed.

The qualitative study is predicated on a desktop analysis of publicly accessible secondary data. According to Nkabane [1] and Makhubu [2] qualitative research aims to gather detailed descriptive information about a specific phenomenon to gain insight into that phenomenon. Literature and document reviews are employed to collect relevant data. According to Machi and McEvoy [3] a literature review is a written assignment that makes a persuasive argument based on a thorough analysis of the state of knowledge regarding a particular subject of study. According to Bless and Smith (2011, cited in Mutenga [4]), the goals are to familiarise the researcher with advancements in the field, identify knowledge gaps, pinpoint flaws in earlier research, and examine the benefits and drawbacks of research methodologies employed by others.

The document review is a type of qualitative research where the researcher interprets documents to provide context and voice for an assessment topic [5, 6]. Various sources of literature were used to compile information, including journal articles, internet sources, and newspaper articles. Documents used to gather data include annual reports of public service departments, Public Service Commission Reports, Auditor-General Reports, legislative frameworks, and Acts. The information was assessed using document and conceptual analysis.

Document analysis is a social research technique for gathering pertinent documentary evidence to bolster and validate research findings – particularly in the literature review chapter. This task entails reading critically and reviewing a plethora of written content (Creswell, 2013, cited in Mutenga [4]). Furner (2006:233-234; also cited in Nhlapo [7] and Makhubu [2]) defines conceptual analysis as a method that views concepts as classes of things, occasions, attributes, or connections. The technique aims to define the meaning of a given concept by identifying and describing the circumstances under which any entity or phenomenon is (or could be) classified under the concept in question. The goal of conceptual analysis as a method of enquiry is to enhance our understanding of how specific concepts are (or could be) used to communicate ideas about a field of interest.

The e-governance layer model served as a theoretical framework for the study. The following sections justify the use of electronic services as a step towards enhancing service delivery. This model comprises several layers, one of which is the access layer. This layer, also referred to as the government-citizen-business interaction process or business stakeholders, plays a crucial role in service accessibility (Irani 2005, cited in Ncamphalala [8]). The primary source of information for citizens is the government website, where they can apply for jobs, search for openings, send emails and SMS messages to the government regarding services they have received, or voice grievances about public issues (Irani 2005, cited in Ncamphalala [8]). This interaction can be viewed as a one-way exchange of information between the government and the aforementioned users. This type of communication is also known as an online communication channel, through which the government provides services to the nation's citizens (Irani 2005, cited in Ncamphalala [8]).

2. Municipal Service Delivery in South African Municipalities

South Africa experienced social division in the past, particularly during the apartheid era before the transition to democracy. Several discriminatory laws, including the Group Areas Act of 1950, were enacted, resulting in racial segregation. These historical legacies have led to the division of South Africa's districts and municipalities into wealthier and poorer areas (see Sartorius and Sartorius [9]). The right-wing National Party (NP) was elected to power, marking the beginning of apartheid. The Group Areas Act 41 of 1950 was subsequently introduced, enacted, and enforced by the government, further entrenching the geographical segregation of racial groups. However, most of the population did not support the Act, as stated by Chaskalson (1987, cited in Shaidi [10]). This Act was strengthened

and introduced for a variety of reasons. Restricting the flow of non-White people, especially Black people from rural regions into large towns and white-only communities, was the main motivation. As the economy flourished, more people moved into the large cities. Semi-urban townships for Black, Indian, and colored populations were established by the government to combat the influx and combine the expanding numbers [11]. Additionally, the Population Registration Act, Act No. 30 of 1950, mandated that all South Africans be categorised as either White, Black, or Colored [11]. Apartheid's denial of constitutional rights and public participation led to subpar service delivery standards, as well as a shortage of essential resources and expertise in non-white communities. However, the post-apartheid era has not improved the situation [12]. When South Africa gained democracy, it is likely that it inherited a country with dispersed public administration functions that provided public service delivery, as emlhasised by Muthien [13]; Soga [14]; Vyas-Doorgapersad [15] and Vyas-Doorgapersad [16]. Non-White communities received inefficient and unequal service delivery in comparison to White areas driven by elites. This situation was made worse by geographic barriers that separated rural and urban communities. People realised that reform is necessary to achieve social equality and end past injustices as a result of the differences in service delivery, further highlighted by Franks [17]; Soga [14]; Vyas-Doorgapersad [15] and Vyas-Doorgapersad [16].

After 1994, the government inherited a significant infrastructure backlog from the apartheid system, which affected most of the population. Due to a lack of funding for municipal infrastructure, millions of people in black communities were deprived of essential services such as roads, water, sanitation, and garbage collection during apartheid [18]. Municipal affairs were transferred to provincial governments on May 31, 1910, when the Union of South Africa was established under the South African Act of 1909. For many years, the central government paid little attention to municipal affairs and made no contributions to developing local administration and governance structures in South African cities [19].

Another challenge affecting service delivery in the current democratic era is migration and population growth. The City of Johannesburg (CoJ) is the largest in Gauteng Province, with 4.4 million residents. Cape Town follows with 3.7 million, and eThekwini ranks third with 3.4 million World Population Review [20]. Statistics South Africa (Stats SA) [21] indicates that Gauteng had the highest percentage of households (29.3%), followed by KwaZulu-Natal (17.0%), the Free State (5.6%) and the Northern Cape (2.1%). The high population density in metropolitan areas has been attributed to immigration.

Statistics South Africa (Stats SA) [21] emphasises that providing impoverished households access to essential utilities such as electricity, water, and garbage collection improves their quality of life. Therefore, municipalities must constantly strive to ensure access to these services [22].

Service delivery challenges cause dissatisfaction, anger, and a loss of trust among community members. According to the Public Servants Association's (PSA) 2015 report, the Edelman Trust Barometer – a global survey of trust in institutions across 27 countries – ranked South Africa last in "Trust in Government". In 2015, only 16% of South Africans trusted their government, compared to a global average of 48% [23].

Other studies have produced significantly different results. Approval ratings for President Zuma, which serve as a rough proxy for trust in government, fluctuated between 34% and 60% during his administration. The Reconciliation Barometer, an annual survey, reported similar levels of trust in government but highlighted disparities among racial groups. Fewer than 30% of white South Africans expressed trust in the government, compared to over 50% of black South Africans [23].

While little data is available on trust in unions or other institutions, the Reconciliation Barometer underscores a broader societal distrust. Approximately 28% of respondents reported mistrusting other racial groups, indicating a deep and pervasive distrust across the country [23]; see Graph 1).
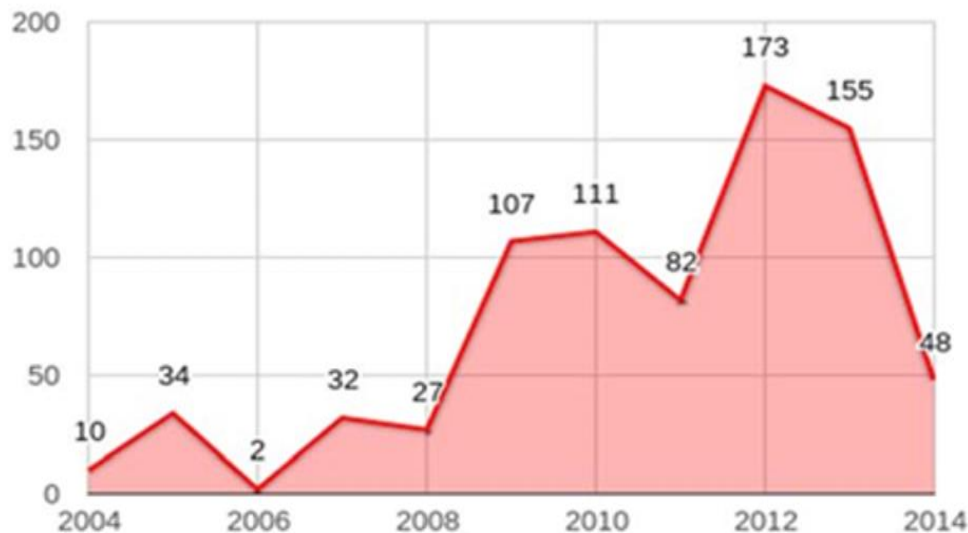
Figure 1.
Number of major service delivery protests 2004-2014.
Source: Cited in PSA (2015:7).

The Municipal IQ Hotspot, in its 2023 report, expanded Graph 1 by adding the information for 2014 and then until 2022, providing extended statistics related to service delivery protests (see Figures 2 and 3).
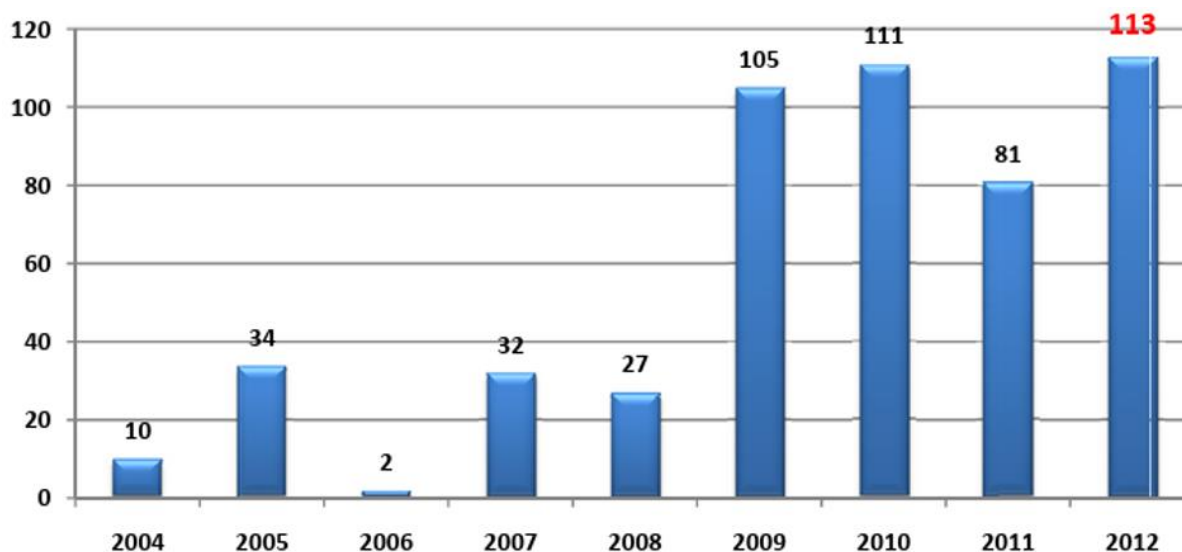

Figure 2.
Major service delivery protests, by year: 2004 – (31st July) 2012.
Source: Municipal IQ Hotspot Monitor, cited in Department of Cooperative Governance and Traditional Affairs (CoGTA) [24].

The statistics shown in Figure 2 indicate that protests over service delivery increased by 22% during the period under review. July was an unusually protest-filled winter month, although not as high as the peak in May. Of the protests that month, 41% occurred in impoverished informal settlements, and 46% were complaints about electricity [24].
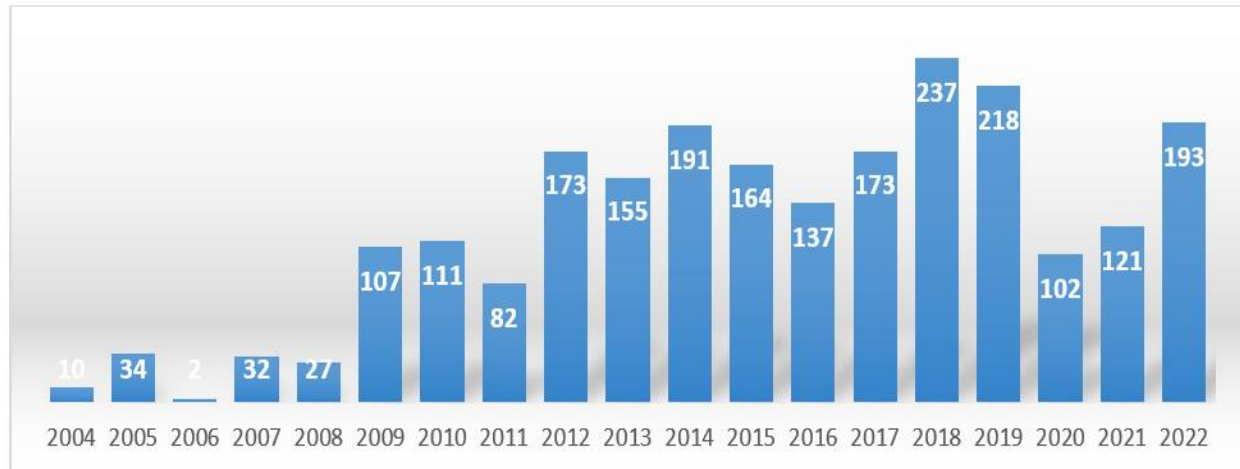
Figure 3.
Major service delivery protests by year (2004 –2022*).
Note: *Jan-Dec 2022.
Source: Municipal IQ Municipal Hotspots Monitor [25].

Wasserman, Chuma, and Bosch (2018, cited in Mamokhere [26]) indicated that service delivery protests are a significant tool for drawing attention to shortcomings in South Africa's service delivery. Protesters can pressure the government to enhance service delivery in affected areas by highlighting these problems. These protests also help raise awareness among the media and the general public about the challenges communities face when lacking essential services. In this way, Wasserman et al. (2018, cited in Mamokhere [26]) posit that service delivery protests can catalyse change, potentially leading to more acceptable outcomes for citizens and improved service delivery. The author of this article contends that such demonstrations must be carried out legally and peacefully, with all participants engaging in productive discussions to address the underlying issues.

3. Factors Causing Inadequate Service Delivery in Municipalities

Poor financial management and a lack of accountability are exerting pressure on South African municipalities, adversely affecting the provision of efficient and effective services. In South Africa, financial control is the primary determinant of local government's success or failure. Municipalities face numerous challenges in managing their finances effectively and efficiently. These challenges include corruption, failure to collect overdue debt, lack of knowledge, and exorbitant salaries and bonuses [27]. These issues also hinder the effective and efficient delivery of municipal services. Additionally, financial mismanagement is driven by various other factors, such as "a lack of skills and a lack of internal controls" [24]; see Figure 4).
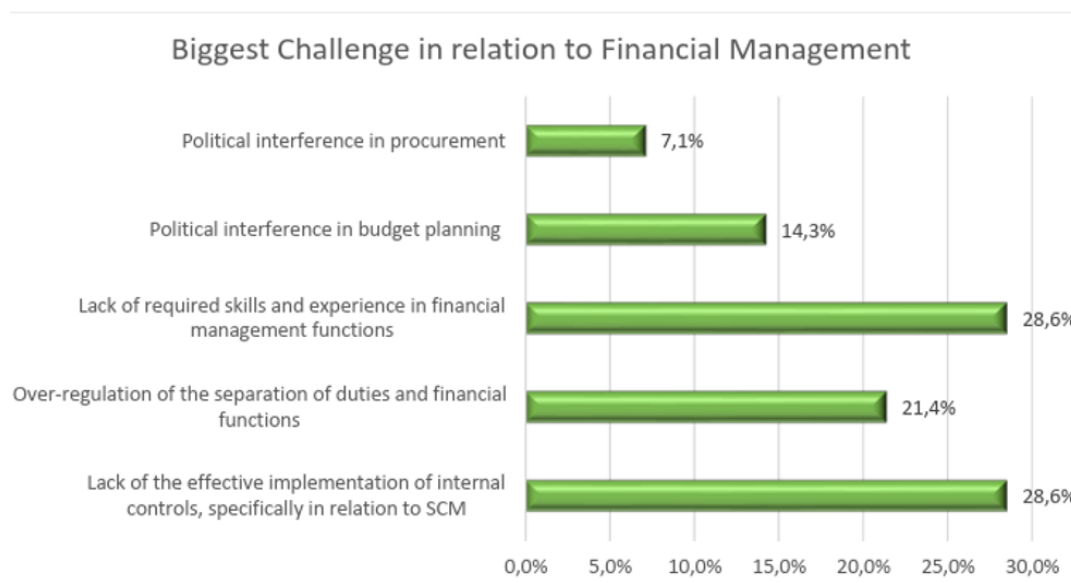
Figure 4.
Most significant financial management challenges.
Source: Department of Cooperative Governance and Traditional Affairs (CoGTA) [24].

The National Planning Commission [28] notes that local governments are currently severely hampered by financial constraints. Numerous South African municipalities are already experiencing financial difficulties due to decreased revenue collection, heavy reliance on national government grants, and rising socioeconomic challenges that have increased the demand for essential services [29].

More than half of the country's 257 municipalities are bankrupt and unable to pay their debts or the pensions of their service workers, according to Finance Minister Enoch Godongwana, as cited by Ensor [30]. Additionally, the Auditor-General's office reports that 28% of South Africa's municipalities are in such dire financial condition that it is unlikely they will remain viable in the future [31].

The National Treasury remains concerned about the financial instability of South Africa's 257 municipalities due to persistent issues such as mounting municipal and customer debt, poor revenue collection, and underspending of grant allocations. Former President Kgalema Motlanthe has warned that the country's municipalities are on the verge of collapse, noting that 66 are dysfunctional and 163 are in distress [32]. The Treasury has previously cautioned that significant underspending in this sector could have disastrous effects for affected municipalities, particularly regarding councils' ability to carry out their service delivery mandates [32].

Maarten Ackerman, chief economist at Citadel, cautioned that the quality of our municipal audits and service delivery is deteriorating and that the leniency currently shown to defaulting municipalities sends the wrong message to other indebted state-owned businesses [32]. Many local municipalities in South Africa are either bankrupt or in danger of becoming so, which impairs their capacity to offer high-quality public services [33].

Municipalities are responsible for providing services and infrastructure critical to the well-being of their citizens, fostering community responsibility, engagement, and growth. According to the South African Constitution, local governments must facilitate community participation in the integrated development plan (IDP) to provide essential services such as electricity, water, sanitation, and healthcare. However, in practice, South Africans experience a different reality. The Auditor-General and COGTA have identified 43 local municipalities as corrupt and poorly managed [34].

Corruption remains a prevalent problem as municipalities remain susceptible to fraudulent activities. The Special Investigations Unit oversees the Local Government Anti-Corruption Forum

[30]. The Hawks are currently investigating 123 cases of corruption across the country's 257 municipalities. Since 2014, the Special Investigations Unit has referred 273 cases of suspected offences – including fraud, bribery, corruption, and violations of the Municipal Finance Management Act – to the National Prosecuting Authority (NPA) for prosecution in 15 municipalities [30].

A closer examination of corruption trends reveals the most common types of misconduct within municipal offices and departments. Procurement irregularities account for 34% of reported cases, followed by embezzlement (9%) and employment irregularities (8%). These findings, as highlighted by Corruption Watch [35], cited in Vyas-Doorgapersad [36]), indicate that corruption is most frequently reported to the municipal manager's office (see Figure 5).
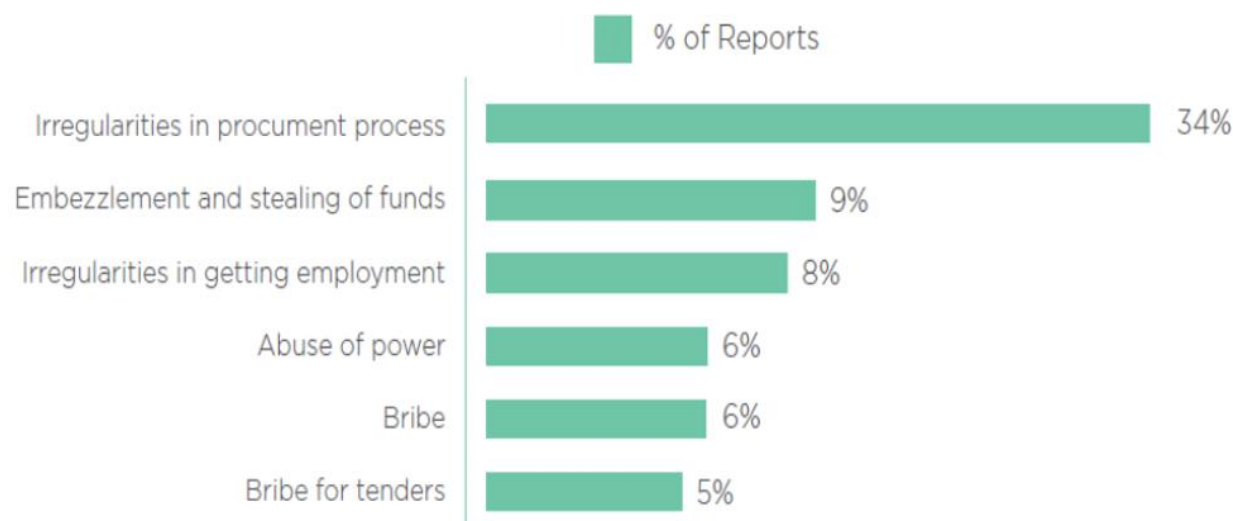

Figure 5.
Most commonly reported irregularities in municipalities.
Source: Corruption Watch [35] and Vyas-Doorgapersad [36].

Corruption during the COVID-19 pandemic adversely affected service delivery in various sectors, including healthcare and social development. Corruption has also been recorded concerning sound governance practices at the local government level. At the municipal level, the Local Government Sector Education and Training Authority (LGSETA) is responsible for maintaining good governance Vyas-Doorgapersad [36]. However, according to the Mothabi and Vyas-Doorgapersad [37] cited in Vyas-Doorgapersad [36]), a forensic investigation was conducted into LGSETA during the 2018/2019 period.

Several factors contribute to inadequate talent management, including seasonal employment fluctuations across various industries, inefficiencies in the training system, lack of funding, and failures in the education system. The absence of well-defined job descriptions has made it difficult to manage the skills of local government employees [38]. Deficiencies in service delivery are exacerbated by appointing employees or officials who lack expertise in their respective fields and have inadequate skills. Several challenges preventing municipalities from adopting talent management in the 4IR include administrative and political procedures, bureaucracy, lack of investment, absence of an institutional and legislative framework, and insufficient support from state departments [38].

Few municipalities in South Africa have the necessary technical skills. Where these skills are available, there is often a shortage of qualified staff to support them in delivering high-quality public services [33]. The Department of Communications and Digital Technologies (DCDT) [39] reveals that South Africa lacks expertise in data science, which presents significant obstacles for municipalities implementing 4IR technologies. The successful adoption of 4IR requires skills such as project

management and engineering. However, municipalities face challenges due to a shortage of qualified staff, insufficient technical know-how, and limited capacity to operate complex new technologies. For example, municipalities may have trouble recruiting information technology (IT) specialists or data scientists who can create and oversee sophisticated digital systems [40].

The challenge is particularly problematic in rural municipalities, where access to technology and internet connectivity is limited. Many rural areas lack essential digital infrastructure, making it difficult to deploy 4IR technologies and hindering digital transformation. The workforce is an organisation's most valuable resource. However, employees in rural municipalities often lack the knowledge and experience necessary to handle 4IR technologies, including blockchain, data analytics, cybersecurity, artificial intelligence, and robotics [41]. While 4IR technologies offer numerous benefits, rural municipalities must also consider the cost of purchasing and integrating these technologies into their operations. Despite receiving budget allocations at the start of each fiscal year, municipalities may lack sufficient funding to invest in 4IR technologies, digital infrastructure, and staff training [41].

The South African government holds a crucial responsibility in developing the necessary skills for a smooth transition to 4IR. Additionally, the government plays a significant role in ICT education, policy, and legislation. The advancement of e-government initiatives depends on collaboration between the government and other stakeholders, including businesses, non-governmental organisations, local communities, and traditional leadership institutions. Municipalities in South Africa can act proactively to address skills gaps by implementing national policies and programmes [42].

A competent workforce is essential for the effective deployment of 4IR technologies. However, municipalities in South Africa struggle to ensure that their staff and residents receive sufficient instruction in digital literacy and specialised 4IR skills. The City of Johannesburg's Digital Ambassadors programme provides municipal employees with digital skills [43]. Expanding these programmes to all municipalities remains a significant challenge. Nonetheless, various interventions have been introduced to bridge the digital literacy gap between communities and workplaces [44].

Coyne, et al. [45] note that inadequate infrastructure poses significant obstacles to efficient service provision. Poor infrastructure is a problem for many South African municipalities, especially those in underdeveloped or underprivileged areas. Deficiencies in areas such as roads, water supply, sanitation, and electricity not only limit the availability of services but also exacerbate socioeconomic issues in affected communities. Traditional methods of addressing these deficits are often time-consuming and resource-intensive, highlighting the need for innovative solutions provided by the 4IR [46, 47]. Although many municiplaities have adopted the digitalised services, some municipal bodies have yet to embrace new technology and electronic governance tools that could transform the local provision of public services, according to Akula, et al. [48] and Vyas-Doorgapersad [49].

4. Recommendations

This article proposes an analytical framework known as Talent Management in 4IR to Improve Service Delivery (see Figure 6).
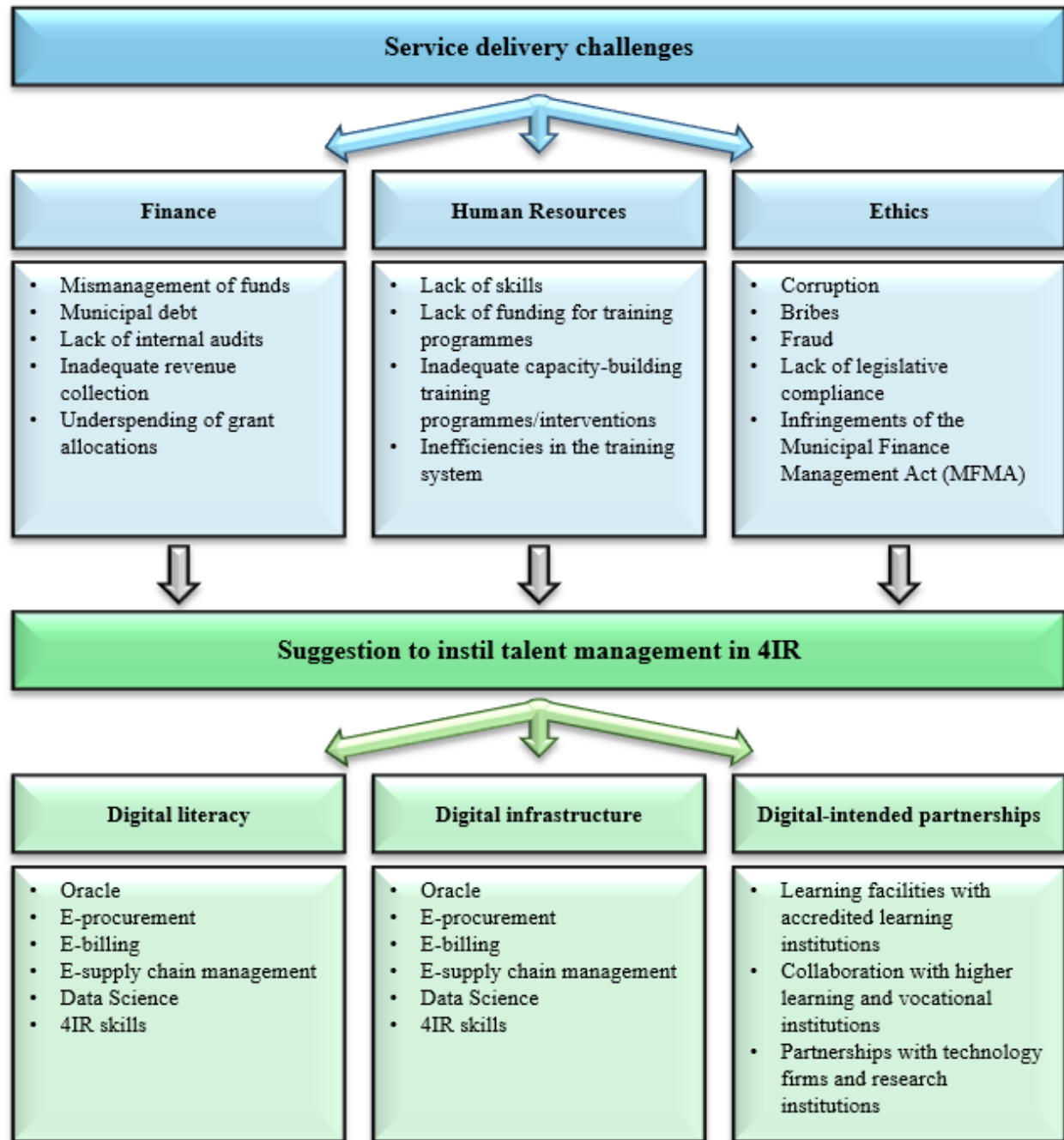
Figure 6.
Talent Management in 4IR to Improve Service Delivery.
Source: Author's illustration based on secondary information.

Municipalities must appoint officials with the necessary and pertinent skills to reinforce the sound financial management standards specified in the statutory framework. Human resources (HR) officers should specify in job postings that they need adaptable employees who can quickly adjust to changes in social, economic, and environmental conditions.

E-procurement processes must be integrated into municipal e-services, and adequate training must be provided to municipal personnel to operate e-platforms effectively. Training sessions should also be provided for community members to ensure they can utilise e-services. Similarly, e-tendering systems must be available to municipalities. As there is a risk of favouritism, bidders must submit their documents online during the bidding process. Public officials should actively engage with stakeholders and the community by seeking input on innovative projects and investment strategies before tender briefings. Bidders should also have the opportunity to develop deliverables and receive mentorship from successful companies with shared interests.

Municipal workers often lack the necessary training to utilise digital tools and take advantage of new technologies. Municipalities should establish training initiatives and collaborations with academic institutions to address this problem. For example, they can partner with nearby universities to provide cybersecurity, AI, and data analytics courses. This strategy will enable municipal employees to adjust to the changing digital environment. Municipalities should support local initiatives, while the Department of Education and the Department of Science and Technology can facilitate collaboration with pertinent stakeholders. Compliance with the Skills Development Act and Skills Development Levies Act is also essential, as these regulations can help identify employees' needs for 4IR competency. Facilitators can be appointed to train employees in the technological skills required to operate e-services and manage 4IR platforms.

Geographically remote municipalities can overcome training challenges by partnering with civil society and the private sector within their jurisdictions. Scheduling online training sessions with external facilitators via platforms such as Microsoft Teams and Google Meet can also provide an effective solution, allowing employees to receive training through digital platforms.

Municipalities must navigate the complexities of 4IR technologies to address capacity-building challenges, but advancement may be hampered by a shortage of qualified staff. Ensuring that municipalities can attract and retain the talent required to lead 4IR initiatives is essential. Employees at all levels must also possess the technological expertise and digital literacy needed for these 4IR-driven transformations. Incorporating 4IR into service delivery legislative frameworks is vital, along with establishing by-laws that regulate its implementation in municipal operations. Policies and strategies should be tailored to each municipality's technological and socioeconomic contexts.

Implementing a comprehensive skills development program is crucial. Municipal employees will receive ongoing training and upskilling as part of this programme to improve their knowledge of 4IR concepts and technologies. They can be prepared to fully utilise 4IR by working with recognised training organisations and employing online learning resources. Developing a skilled workforce will enable municipalities to optimise service delivery and fully leverage 4IR advancements.

Another suggestion is to establish alliances with technology suppliers and industry stakeholders. This involves establishing strategic partnerships with reputable private sector businesses, technology companies, and 4IR-focused research institutes. Municipalities can enhance their 4IR readiness and more skillfully address the challenges of technology adoption by leveraging the resources and creativity of these partner organisations. For this arrangement to succeed, external stakeholders should be well-informed about 4IR adoption and the procedures that ensure their needs are considered. The use of advanced digitalised platforms to deliver services is also essential for municipalities, enabling community members to receive services on time.

The provision of services to citizens, government agencies, other legal entities, and employees in creative ways within the networked economy is referred to as electronic service delivery. Technologies such as the Internet and interactive voice response (IVR) kiosks are used as alternative mechanisms (Nyamukachi, 2006, cited in Maseko [50] and Vyas-Doorgapersad [49]. Maseko [50] and Vyas-Doorgapersad [49] further explains that by utilising technology platforms to communicate with their constituents, service providers, including government agencies at all levels of governance, can enhance service delivery. The ability to communicate directly with a responsive governing body to voice concerns and receive answers to questions is highly valued by those who benefit from such services.

Soga [14] citing the European Community (EC) [51] supports the idea that e-government necessitates paradigm shifts in government functions, particularly in transparency and democracy in interactions with the public. Government rules and policies must incorporate these interactions to achieve a more significant transformative effect. The operational assistance that e-government administrators and systems provide to users is referred to as support systems. Users must have open access to the procedures, frameworks, and objectives of e-government and disclosure of security vulnerabilities and threats [14].

South African municipalities must embrace and adapt electronic measures to provide seamless services to community members in a world that is rapidly becoming more digitally connected. From a government perspective, Information and communications technology (ICT) refers to e-government reforms implemented to support more effective and efficient governance (Hafkin, 2009, cited in Ncamphalala [8]). It is further suggested by Ncamphalala [52] concluding that ICT uses the newest technology in government operations to communicate information and data to stakeholders, enterprises, and members of the community. In order to link necessary services with e-platforms for easy access, local government must adopt e-local government projects in the 4IR's digital age

5. Conclusion

The study revealed that although systems and processes were manual during the pre-digitalised era, tasks were accomplished. Operations were managed and monitored through a job-card approach, effectively facilitating the completion of daily tasks. However, since adopting electronic processes, a shift has been observed in how tasks are tackled, revealing flaws in traditional modes of operation. The slow pace of achieving targets, bureaucracy, inefficiencies due to delays, and backlogs were evident, along with a significant amount of time-consuming paperwork. Additionally, community members residing far from municipal offices faced geographical challenges when travelling to raise service delivery concerns.

The literature review also highlights that municipalities are plagued by corruption and misconduct, adversely affecting service delivery. Other challenges include capacity constraints, poor infrastructure, and inadequate resources, to name a few.

The study recommends that municipalities adopt e-services, especially 4IR platforms, to deliver more effective and efficient services to community members. This requires securing funding opportunities from the private sector, investing in training programmes to equip personnel and community members with skills for technological-driven services, deploying community development workers to conduct digital workshops in multiple languages to accommodate vernacular needs, and establishing kiosks with computers and internet access for community use. Distance education through open universities can be considered, with satellite centres in rural areas providing virtual training to meet the needs of rural municipalities.

Financial limitations remain the most significant issue facing local governments. A substantial amount of funding is required for capacity-building initiatives to succeed. Despite budget constraints, the funds allocated to local government at the beginning of the fiscal year should be used primarily for talent development and digital infrastructure. Leadership should address the digital divide and emphasise the significance of implementing 4IR technologies while highlighting their advantages. Ensuring rural residents can participate in capacity-building programmes will help reduce barriers to digital literacy and access to 4IR technology.

In conclusion, introducing 4IR technologies has had positive and negative impacts on communities and their residents, drawing criticism and praise. As previously mentioned, the advantages include increased economic growth, improved accessibility to services and technology, and enhanced efficiency and transparency in municipal processes.

However, challenges such as the digital divide, knowledge, skills, experience disparities, financial limitations, privacy and security concerns, data management issues, and resistance to change persist. Ultimately, adopting 4IR technologies will significantly benefit local government and residents by enhancing efficiency, transparency, and service accessibility. This synthesis also emphasises the

necessity of capacity-building programmes to ensure the effective deployment of 4IR technologies. Once the implementation phase is completed successfully, municipalities can begin improving service delivery and the overall standard of living for citizens.

The study contributes to the disciplines of public management and information technology. Its limitations stem from the exclusive use of a qualitative approach to gather information. Future research may include studies involving multiple municipalities, incorporating interviews with personnel to assess the implementation status of 4IR interventions in municipal service delivery.

Transparency:

The author confirms that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

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