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The Use of Artificial Intelligence in Enhancing Accountability and Transparency in South African Municipalities: Prospects, Barriers and Strategic Pathways for Local Government

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ABSTRACT

This study examined how artificial intelligence (AI) can enhance accountability and transparency in South African municipalities. The study responded to persistent municipal governance challenges, including weak financial oversight, fragmented data systems, service delivery inefficiencies and declining public trust. A systematic review design was adopted to synthesise global, African and South African evidence on AI adoption in public administration and municipal governance. The review was guided by PRISMA principles and included 43 eligible studies selected from academic, policy and institutional sources. The Technology Acceptance Model and Institutional Theory were used to interpret both user-level and institutional factors influencing AI adoption, including perceived usefulness, perceived ease of use, staff readiness, organisational resistance, regulatory pressure and governance norms. The findings show that AI can support municipal accountability through fraud detection, procurement monitoring, audit support and anomaly identification. AI can also improve transparency through citizen-service chatbots, complaint-routing systems, open data tools and integrated information platforms. However, the review found that AI adoption in South African municipalities is constrained by poor digital infrastructure, weak data interoperability, limited technical skills, financial pressure, organisational resistance and unclear ethical governance arrangements. The study concludes that AI should be treated as a governance support tool rather than a complete solution to municipal failure. Its value depends on phased implementation, data modernisation, capacity building, legal safeguards, human oversight and inclusive citizen engagement. Future research should examine municipal-level AI implementation, public trust, algorithmic accountability and the effects of AI on equitable service delivery.

Keywords: Artificial intelligence; accountability; transparency; municipal governance; South Africa; technology adoption; public administration.

INTRODUCTION

However, the municipalities within South Africa still experience governance problems due to lack of accountability, mismanagement, delivery problems, and lack of trust. As highlighted by McKenzie (2023), the governance challenges encountered in the municipal governments within South Africa are highly associated with the constant adverse audit outcomes, as well as lack of sufficient internal controls systems. Governance issues that are experienced by the municipal governments extend beyond governance and touch on the capacity to offer

essential services like water supply, waste management, construction of roads, development of housing projects, among others. As noted by Mienie (2020), the governance challenges within South Africa highlight how poorly the country has performed as the state. The parliament reports reveal that many municipalities in South Africa lack proper finance as there are always cases of unauthorised, irregular, fruitless, and wasteful expenditure (PMG, 2024). Consequently, there cannot be solutions to the governance problems faced by the municipal governments using normal measures. Alternative measures need to be considered.

With time, the role of artificial intelligence in international discussions regarding reforms in public sector management has continued to rise because of the contribution that the technology offers towards the efficiency in analyzing, monitoring, and service delivery. This has been stated by Henman (2020) who says that among some of the ways in which AI can contribute towards improving public administration include analytical prediction, automation in decision making, detecting fraud, and citizen services. Further, according to Millard (2023), there is potential in achieving an improvement in public governance through digital transformation, but it can only happen if accompanied by institutional change rather than only technological innovation. For instance, in Brazil, there have been instances of using AI in public procurement systems that help in improving public governance via improved monitoring and anomaly detection within public procurement procedures (Langevin, Fassio & Pigot, 2022). Nevertheless, where there is the use of such AI technologies for problem-solving in another context, adjustments are required.

Indeed, the utilization of AI technology in the South African local government sector is important since there are several cases in which accountability cannot be achieved as a result of the late detection of the problem, poor documentation processes, and lack of adequate follow-up activities after the process of investigation. According to Mhlongo & Thomas (2024), although there have been technological developments within the Fourth Industrial Revolution, these advancements cannot be utilized fully within the context of the South African local government owing to the disparities in the capabilities of the different municipalities. In the same regard, Shava and Vyas-Doorgapersad (2022) show that there are limitations on the adoption of digital innovations in the South African local government because of the inadequacy of the systems' capacity and varied situations regarding service provision. Indeed, the adoption of AI technology in this context cannot be viewed as the ultimate solution to the challenges faced by municipalities (Nokele,2025).

Problem statement

With this regard, the problem of research lies in the continued existence of the problems of accountability and transparency in the municipal governments of South Africa, in spite of the use of auditing and reporting. With this regard, as pointed out by PMG (2024), there are many municipalities which continue facing financial difficulties due to the implementation of these control procedures rather late, so that the damage may be done. As mentioned by Mienie (2020), the lack of effective governance leads to the drop in trust towards governmental institutions as well as to the whole process of service delivery. The traditional approaches to control within municipal governments include auditing and procedural evaluation. Nevertheless, they are ineffective with regards to detecting the instances of excessive spending.

According to the literature review mentioned above, one may say that the technology of artificial intelligence can be considered an instrument that enables public administration to become more accountable thanks to its ability to detect cases of fraud, automate processes, consolidate data, and function as a platform for delivering services to citizens. According to Madan and Ashok (2023), there is a clear trend towards the introduction of artificial intelligence in public administration; however, it requires several prerequisites, such as readiness at the organizational level, governance capabilities, and responsible integration of the solution. Furthermore, the mentioned authors note that the AI technology provides the possibility to control financial risks in public administration because of its ability to detect anomalies. On the other hand, one may state that there are no academic papers devoted to the process of applying artificial intelligence technologies to municipal administration in South Africa. Existing academic works consider the issue of using artificial intelligence either in public administration or smart cities but not municipalities.

Rather, the issue is not about the ability of AI but rather its actualization within the responsible use of this potential within the framework of weak infrastructure, lack of sufficient information systems, absence of required skills, and general distrust of citizens in municipal governance. According to Mhlongo & Thomas (2024), the South African municipalities are still facing many difficulties both in terms of human resources and technological aspects. Moreover, as mentioned by Mbonye, Moodley and Nyika (2024), the environment where AI is utilized may raise certain legal and moral issues including privacy concerns. The study thus aims to respond to the current gap between policy and science through the systematic analysis of literature dedicated to the adoption of AI in the field of municipal governance. Value add of the proposed study lies in creating the framework for discussion of AI capabilities considering all limitations that exist in the field of municipal governance in South Africa. This makes the study very practical and important in spite of being critical in terms of the utilization of AI as a governance tool.

Research question

The primary research question for this systematic review is: How can artificial intelligence enhance accountability and transparency in South African municipalities?

Sub-questions include:

- What are the global best practices for AI adoption in municipal governance?
- What are the specific challenges faced by South African municipalities in adopting AI?
- Which areas of municipal governance can benefit most from AI integration?
- What strategies can be employed to overcome barriers to AI implementation in South Africa?

LITERATURE REVIEW

AI and Digital Transformation in Public Administration

As such, AI technology has become incorporated into broader initiatives of reforming public administration due to the need for more responsive and efficient decision-making mechanisms in governance. In the domain of public administration, AI represents all types of technological means that enable analysis of information and detection of trends, in addition to decision-making. Henman (2020) claims that AI offers an opportunity for implementing predictive analytics, automating processes and providing decision support in government operations, even though it should be governed properly. According to Al-Ansi et al. (2024), AI and digital technologies are helpful in facilitating the development of e-governance as they allow making governance more responsive and connected. As far as municipal governance is concerned, these features are important due to the continuous processing of procurement records, billing, complaints, assets and audits. In this respect, the main value of AI technology for governance does not lie in taking the place of employees but rather improving the foundation for decisions.

However, there are certain things that can be done in order to facilitate accountability through anomaly detection as well as transparency in decision-making process in case of incomplete data analysis. In particular, according to Bouchetara et al. (2024), implementation of AI in governmental institutions would help to manage finances effectively by detecting anomalies and creating alert systems. Moreover, as emphasized by Aldoseri et al. (2023), it is imperative to create an adequate data strategy prior to implementing AI technology; otherwise, the latter will become useless. Such an approach seems especially relevant to local governmental bodies since they need to consider many aspects such as finance, procurement, billing, and complaints. Therefore, in other words, nothing can be accomplished with artificial intelligence if it is implemented improperly.

Municipal Accountability and Transparency Challenges in South Africa

There are problems experienced in the municipalities in South Africa relating to accountability and transparency in their service delivery. According to McKenzie (2023), the challenges experienced in some municipalities concerning their finances arise out of lack of proper auditing, weak internal controls and poor governance in general. This is caused mainly by problems in procurement practices, delayed reporting, lack of enforcement of penalties and ignoring of recommendations made during the auditing processes. Apart from the above, PMG (2024) notes that there are continuing financial challenges in the various municipalities arising out of unauthorized, irregular, fruitless and wasteful spending. Moreover, transparency is hindered because of the inability of the citizens to obtain any relevant information about budgeting, projects and service deliveries. It is important that these issues are noted considering the fact that municipal governance is the level of government closest to people and accountable for the provision of services such as water, electricity, sanitation, roads and waste management among others.

What makes it necessary for digital transformation in order to address these problems is that municipal weaknesses are linked to delayed discovery and bad communication. As suggested by Shava & Vyas-Doorgapersad (2022), digital innovation in the case of South African municipalities can be useful in improving service delivery, although the implementation of digital innovation differs from municipality to municipality. Fourth Industrial Revolution innovations can face such challenges as low readiness, lack of skills and poor digital infrastructure as stated by Mhlongo & Thomas (2024). Therefore, it would not be appropriate to recommend the introduction of AI in the work of municipalities as a single approach since some metropolitan municipalities possess adequate infrastructure and skilled professionals while others do not yet introduce any innovations in their activity. That is why the review considers this aspect. The introduction of AI in order to ensure accountability and transparency will be relevant only when the municipalities will be able to overcome such problems as data accuracy, professional skills, ethical aspects and accountability.

Global and African Applications of AI in Public Governance

Despite all of the above, however, there remains a significant way that AI can contribute to public administration in relation to efficiency, regulation, and citizen participation, although, in this instance, effectiveness depends significantly on the context in which AI is applied. In Brazil, for instance, AI technologies have been used by the government to identify any irregularities within the public procurement process (Langevin, Fassio and Pigot, 2022). This example is relevant to South African municipalities because procurement remains one of the areas most exposed to weak transparency and financial irregularity. In Nordic municipal settings, AI-enabled tools have been used to support citizen engagement and reduce pressure on routine administrative services (Andreasson and Stende, 2019). However, these cases should not be treated as direct templates for South Africa. They were developed in institutional environments with different levels of data maturity, administrative capacity and public trust. Their main value is that they show possible AI functions, while also reminding South African municipalities that technology must fit local governance conditions.

Nonetheless, AI technology is gaining more popularity in African public administration despite the lack of adoption in the municipalities sector. Ibeneme et al. (2021) assert that the technology of artificial intelligence has played a vital role in improving efficiency when it comes to using data in the healthcare sectors of Africa through the rapid delivery of data from the government side. As per Aderibigbe et al. (2023), the use of artificial intelligence can be instrumental in solving problems in service delivery in developing nations only if the technology is used based on the capabilities of the country concerned. Even though there is no mention of AI technology being used by the municipalities in either of the two studies above, they are quite relevant since they can provide insight into how best to prioritize and organize services in municipalities. Such information will be helpful in case of complaints concerning services offered by the municipality.

Barriers to AI Adoption in Local Government

Another Barrier to the Implementation of Artificial Intelligence Technologies Is Poor Digital Infrastructure. According to Shava & Vyas-Doorgapersad (2022), currently, all municipalities use separate databases, paper documents, poor transactions, assets, and infrastructures. The rationale for this situation is provided by the fact that, according to Shava & Vyas-Doorgapersad (2022), poor infrastructures and lack of capacity prevent municipalities in South Africa from using digital technologies. Mhlongo & Thomas (2024) argue that some municipalities cannot prepare themselves to adopt technologies of the fourth industrial revolution due to their poor equipment. In order to implement an artificial intelligence system, it is important to collect accurate information and structure the process of procurement, financing, billing, complaints handling, and service delivery. Without unique numbers within the collected information, the findings gained by using artificial intelligence technologies will not be correct.

The next major challenge that exists is related to human capacity since the decision-makers will have to work on the data and analyze the results derived from the use of the AI technologies in order to take sound decisions. As suggested by Shiohira (2021), AI shifts the set of skills needed in the governmental and organizational sectors, particularly when it comes to handling information and addressing digital problems. Moreover, Thusi & Chauke (2023) note that the South African public service sector is constrained in its ability to attract qualified specialists to their organizations because these specialists will leave the organizations for other better-paying jobs. The problem is quite troublesome for the municipality. Even though the municipality will be able to procure these technologies, it will not be easy for it to deploy them because its personnel will refuse to implement innovation. Additional funds will be needed for professional development and collaboration between universities and tech companies. However, all plans may fail if the municipality retains a hostile environment at the workplace.

This will make it even more difficult for the municipal governments to adopt responsible AI. According to Kar & Kushwaha (2023), some factors must be taken into account before adopting AI in any business entity, including organizational readiness, level of management support, as well as risks and resistance to change. Concerning the application of AI in governmental organizations, resistance to change could be due to fear of losing jobs, uncertainty of responsibility after implementation of the technology, as well as poor performance resulting from the automation technology. As argued by Folorunso et al. (2024), in countries that are low on the developmental scale, hard decisions must be made concerning investments for the successful adoption of AI.

Ethical and Governance Risks of AI in Municipal Administration

The implementation of AI technologies in municipal management is connected with many ethical and regulatory challenges that require clarification prior to implementing the process. According to Wirtz et al. (2020), the application of AI technology in public administration has some risks in terms of opacity, biases, privacy, accountability, and dependence on automated procedures. The problem is especially topical for municipalities,

where AI can be applied in rendering citizen services in such areas as prioritization, provision of assistance to poor citizens, processing of billing requests, detection of any fraud, and handling complaints. In the event that AI systems generate any biased outputs and suggestions that cannot be understood, citizens would be unable to challenge such decisions. This means that transparency will be reduced rather than enhanced.

One of the main acts that must be put in place in order to address some threats associated with the implementation of AI technology in South Africa is POPIA (The Privacy Act). According to Mbonye, Moodley, and Nyika (2024), POPIA refers to any kind of AI technology because it entails the processing of personal information, restriction of purposes of personal information processing, reasonable security of personal information, and reasonable processing of personal information. However, one of the challenges in the implementation of AI technology is the assurance of auditability of machine learning, explainability of algorithm used, informed consent, bias detection, and consequences of the impact of AI on administrative decision-making. In the case of Kuziemski and Misuraca (2020), the model of governance of AI technologies in a democracy should involve accountability and democratic legitimacy of the decision-making process including the decisions made using the help of AI technologies. Hybrid AI governance is, therefore, critical in such situations. Hybrid AI governance involves automation processes, legislation, public deliberation, auditing, and redress where complaints have been raised regarding decisions made through automation.

Engagement of the stakeholders becomes important in the ethical use of the technology due to the fact that it would help the citizens understand the influence of the technology on their lives. According to Helsper (2021), the problem of the digital divide may become the source of social exclusion due to the lack of consideration of factors of accessibility, ability, and affordability in the delivery of online public services. Engagement of the stakeholders during the process of the implementation of AI in the South African case is important due to the presence of differences in terms of connectivity, languages, literacy rates, and trust towards the local government. The process of engagement will affect the introduction of AI depending on consent, policy, multilingual chatbots, appeal, and accountability. It should be mentioned that, as argued by Jarbandhan (2021), public service ethics include good governance in order to benefit the interests of the public.

THEORETICAL FRAMEWORK

Theory is introduced before the review of the literature since, in this case, the theories that have been identified are helpful in understanding the literature. For instance, TAM may be applied in this study in order to examine the process through which municipal officials will make decisions on accepting or rejecting the implementation of artificial intelligence in light of its perceived usefulness, usability, and the individuals' self-efficacy in information systems. According to the ideas of Mthombeni (2024), technology adoption in South Africa relies on the individual's attitude towards technology, technology readiness, and the degree of trust in the Fourth Industrial Revolution technology. In addition, institutional theory was employed to illustrate technology adoption, along with other theories like audit pressure, political pressure, professional pressure, social pressure, and imitation. Technology adoption, as per Kuziemski & Misuraca (2020), within the public realm is guided by technology competencies and democracy.

It is imperative to highlight the importance of the technology acceptance model since the adoption of AI technology in the municipalities is contingent upon whether the policymakers perceive AI to have an advantage to the work process. In cases where the financial officers in the municipality, the procurement officers, as well as the public service delivery managers, understand the advantages that come with the implementation of AI technology in order to detect any errors in spending, organization of data, and handling of complaints from the citizens, then it becomes easier for AI technology to be adopted. According to Henman (2020), the use of AI in decision-making results in better service delivery. Nevertheless, ease of use is another important aspect when adopting new technology. When the employees lack adequate training or view the technology as dangerous and difficult to operate with, then there is little probability of use of the new technology. Organizational readiness as highlighted by Felemban, Sohail, and Ruikar (2024) greatly relies on the skills of the employees, managerial support, and implementation capability.

On the other hand, the theory of Institutionalism is more relevant to the TAM framework as there is an extensive analysis of the factors associated with the pressures on the municipalities. In the case of South Africa, the following are some of the factors that would affect the decision-making of the municipalities: pressures due to auditing, grant funding, procurement processes, national policy considerations, professional pressures, public pressures, and pressures due to service delivery. As stated by Mhlongo & Thomas (2024), there is a clear indication that there emerges a challenge of technological adoption readiness among the municipalities of South Africa amid the era of the fourth industrial revolution. The pressure that causes such a challenge includes coercive pressure, and it is caused by legislative pressure, auditing pressure, and monitoring pressure. Another pressure is normative pressure and

includes professionalism, public administration, and governance. Lastly, another pressure is mimetic pressure because of AI application.

The advantage of this study is the simultaneous use of the principles of TAM and Institutional Theory. Whereas TAM provides the theoretical foundation for understanding the user's and organisational acceptability of AI, Institutional Theory contributes to the analysis of the governance context within which municipal authorities function. As Madan and Ashok(2023) argue, the integration of AI into public administration presupposes taking into account the technological as well as institutional capacities of a given institution. Such an approach can be considered very relevant to the South African municipalities where not only barriers to the implementation of AI such as insufficient IT systems, inadequate levels of digital literacy, budgetary constraints and public distrust cannot be separated, but they all affect the employee's perceptions, managerial style, regulatory requirements and political atmosphere. This study adopts coding by means of four interrelated themes: usefulness, usability, institutional readiness, and governance pressures.

RESEARCH METHODOLOGY: SYSTEMATIC REVIEW DESIGN

In the present study, the systematic review methodological approach was adopted to examine the capacity of AI in ensuring accountability and transparency in municipal governance within South Africa. It is appropriate since the study was not based on the primary data collected from the municipalities but depended entirely on existing literature both academic and institutional. As per Page et al., (2021), systematic reviews require an explicit process for selection, synthesis and determination of studies under review. The systematic review methodological approach adopted in the present study is based on four distinct steps including source identification, record screening, eligibility assessment, and thematic synthesis. Hence, this approach helped the present study move beyond mere discussions and identify the existing literature on the topic of AI in fraud detection, citizen engagement, data management, ethical governance, and technology adoption.

The main research question which served as the basis for the literature review was formulated as follows: How does artificial intelligence facilitate the creation of an accountable and transparent South African municipality? To develop such a research question, it became necessary to obtain pertinent information from international and South African sources. For instance, Madan and Ashok (2023) indicate that the application of artificial intelligence technology within public administration relies on the preparedness of public organizations to fulfill particular goals using technology. Similarly, according to Henman (2020), artificial intelligence technology may be applied in order to improve the provision of public services, but only under the condition that such technological application does not create any risks for the process of public governance. Therefore, the topics of artificial intelligence technology in public administration, local government, municipal governance, financial accountability, citizen services, data governance, and ethical regulation of AI were selected as focal points of the literature review.

Review Protocol and Design Logic

An outline for conducting a literature review was created as a protocol aimed at facilitating the process of source identification and evaluation. The questions posed, search phrases, database, timeframe, inclusion and exclusion criteria, quality assessment strategy, and methodology of synthesis were outlined. According to Page et al. (2021), one should expect that the protocol will describe the methodology used to conduct a systematic review so that it could be evaluated in terms of transparency and replicability. Literature that was published between 2020 and 2024 was taken into account while conducting a review. Although some previous literature was preserved for the purpose of establishing theory or methodology, all literature which did not meet the outlined criteria was excluded from the analysis. Primary literature chosen served the purpose of representing recent discussions on AI, governance, and digital transformation. The protocol also helped categorize literature in terms of conceptuality and empirical nature so as to enhance the evaluation of its evidence.

Table 1: Review Component Summary

Review component	Description
Databases searched	Scopus, Web of Science, JSTOR, Google Scholar, government and institutional sources
Main search terms	"artificial intelligence" AND "municipal governance" AND "accountability" AND "transparency" AND "South Africa"
Additional search terms	"AI" OR "machine learning" OR "algorithmic decision-making" AND "public administration" OR "local government"
Date range	2020–2024
Inclusion criteria	Peer-reviewed articles, systematic reviews, policy reports, government reports and municipal governance studies
Exclusion criteria	Opinion pieces, blogs, non-verifiable sources and studies unrelated to public governance
Appraisal tool	Mixed Methods Appraisal Tool-style screening and relevance-based quality assessment
Synthesis method	Thematic synthesis guided by TAM and Institutional Theory

Search Strategy and Sources

The process of carrying out the research entailed searches in the databases as well as searches in governmental sources. The Scopus, Web of Science, JSTOR, and Google Scholar databases were used to search scholarly material on the utilization of artificial intelligence, public administration, local government, digital transformation, and accountability. The sources were not confined to those available in the databases alone, considering that the processes followed in municipal governance are impacted by audit results, public financial laws, and policies. The source PMG (2024) was selected because it provided fairly recent information on local government audits and municipal financial challenges in South Africa. The Boolean operators were used to formulate the search strings utilizing the terms associated with artificial intelligence as well as governance and accountability. For example, one such string could be formulated in the following way: "artificial intelligence" AND "municipal governance" AND "accountability" AND "transparency" AND "South Africa". This was expanded to include "public administration," "local government," "fraud detection," "citizen engagement," and "data governance".

The search did not limit itself to South African literature alone since the investigation involved comparison on how AI was applied in public administration both at an international level and within Africa. It is worth noting that although there may still be some restrictions in applying AI in the South African municipalities, there might be lessons to learn from other regions around the world. As noted by Wirtz, Weyerer, and Sturm (2020), the application of AI in public administration raises the same governance problems in all democratic nations regardless of the various forms of implementation in each country. In addition, as stated by Mhlongo and Thomas (2024), the South African municipalities have some distinctive problems related to their readiness in implementing technologies associated with the Fourth Industrial Revolution. The sources considered for inclusion in this phase were those that could contribute to understanding the role of AI in accountability, transparency, service delivery, finance, gaining public confidence, good governance, and readiness.

Inclusion and Exclusion Criteria

These inclusion criteria were designed to ensure the quality of the paper by selecting those materials that would directly address the objectives of the study. Hence, any articles and books dedicated to such themes as AI, machine learning, algorithms, digital transformation or data governance in the context of public administration or municipal government were considered in the course of literature review. Moreover, those studies that focused on such themes as accountability, transparency, fraud detection, citizen engagement, public services delivery, data governance or ethical AI were selected based on the inclusion criteria. Such authors as Madan and Ashok (2023) contributed to the literature significantly as their writings addressed the role of AI in the sphere of public administration, hence distinguishing it from its purely technical dimension. Finally, those studies that covered the theme from an African or South African perspective were considered based on the inclusion criteria.

Sources were excluded if they were not related to public governance, local government, public accountability or AI-supported decision-making. Opinion articles, blogs, commercial marketing material and unverifiable online sources were excluded because they did not provide sufficient academic or policy reliability. Studies were also excluded where AI was discussed only in private business settings without any clear relevance to public administration. Duplicate records were removed during screening, and sources with inaccessible full texts were not retained. Where sources were based on grey literature, they were included only if they came from reputable institutions, government bodies or recognised international organisations. This was important because AI governance is a policy-sensitive field, and weak sources could distort the findings. The final body of literature therefore reflected a balance between academic studies, government evidence and selected institutional reports relevant to South African municipal governance.

Data Collection and Screening

Data collection followed a staged screening process. The initial search identified 112 records from academic databases, government sources and institutional publications. After duplicate records and sources outside the topic scope were removed, the remaining records were screened using titles and abstracts. The screening focused on whether each source addressed AI, public administration, local governance, accountability, transparency or municipal service delivery. Seventy-three records proceeded to full-text assessment. During full-text review, studies were excluded where they lacked a clear governance focus, provided no useful evidence on AI adoption, or addressed AI only in unrelated technical contexts. Forty-three studies met the eligibility criteria and were included in the final synthesis. Page et al. (2021) recommend this form of transparent screening because it allows readers to understand how the evidence base was narrowed. The process strengthened the review by making the selection pathway clear and auditable.

Table 2: Screening Stage Summary

Screening stage	Number of records	Decision
Records identified through database and institutional searches	112	Included for initial screening
Records removed after duplication and topic-scope screening	39	Excluded before full-text assessment
Records assessed through title and abstract screening	73	Moved to full-text review
Full-text records excluded after eligibility assessment	30	Excluded with reasons
Studies included in final thematic synthesis	43	Retained for analysis

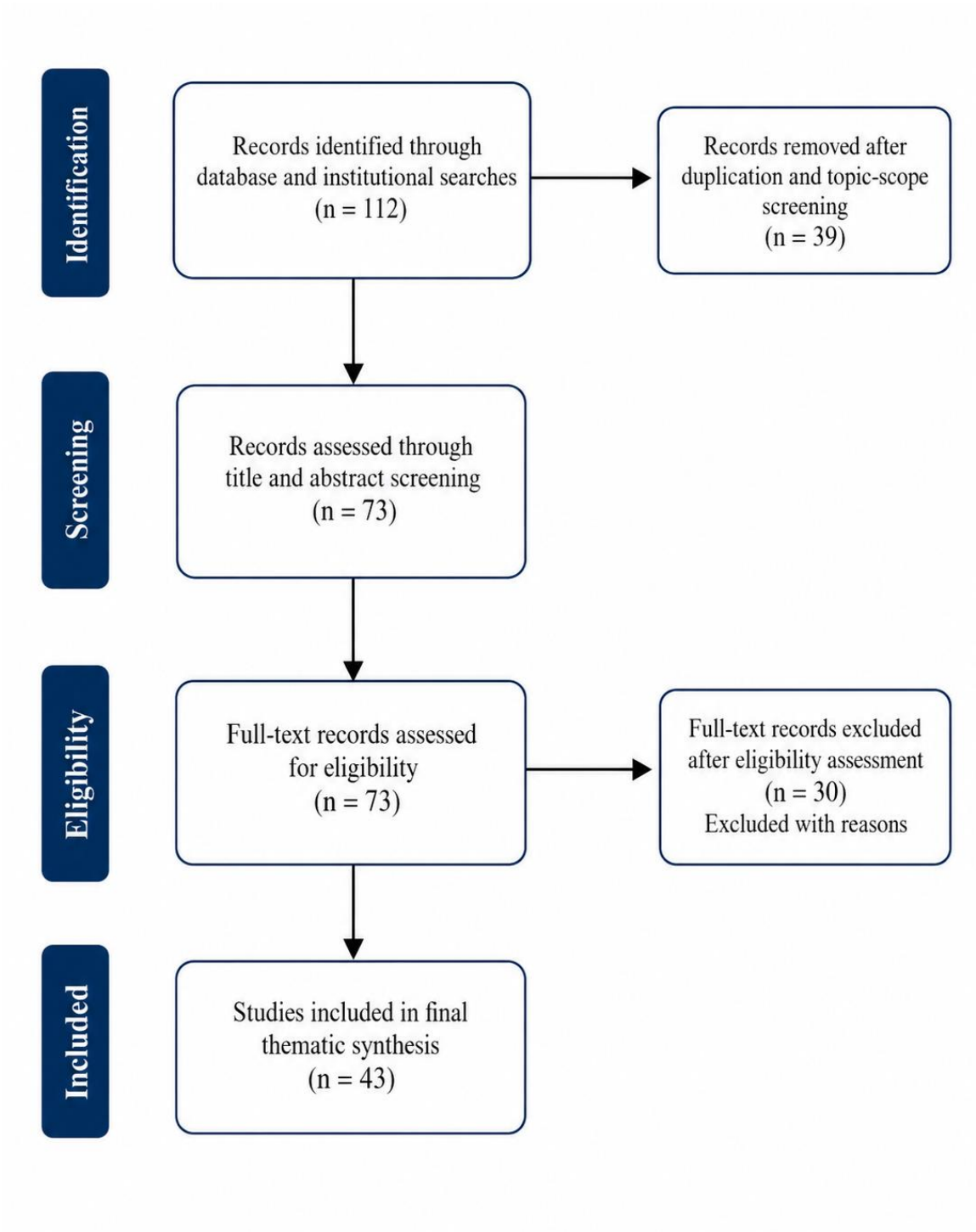

Figure 4.1: PRISMA flow diagram for the study selection process

Quality Appraisal and Risk of Bias Assessment

A quality appraisal process was applied to assess the relevance, credibility and methodological value of the included studies. Each source was assessed using criteria adapted from systematic review quality appraisal practice, with attention to clarity of aim, research design, relevance to AI governance, evidence quality, transparency of method and usefulness for the South African municipal context. Studies were not automatically excluded because they used different designs, since the review included empirical articles, systematic reviews, policy reports and institutional documents. However, more weight was not given to interpretations from weak sources. According to Dwivedi et al. (2021), research in the field of AI is multi-disciplinary. Therefore, the evaluation of sources based on their worth is important. This was particularly vital because not all research studies involving AI were able to provide concrete evidence that could be used for public governance. It was therefore imperative to pay attention to sources that provided useful, credible, and reliable information on AI.

Bias risk was avoided in terms of using screening criteria for all references and checking the evidence base for the claim made. Overgeneralization was particularly monitored for and the instances of overgeneralizing from the global examples to South Africa's AI experience were spotted and excluded. As noted by Mbonye et al. (2024), the era of AI involves legal and ethical concerns that should be analyzed within the context of South Africa. Thus, international examples have been treated only as comparative evidence but not as recommendations for policy action. In order to avoid bias, references have been clustered according to themes rather than to the case or to author from a particular nation. Both the potential benefits and the limitations of AI have been analyzed, which was done to avoid advocating for an untested solution.

Data Extraction and Synthesis

Data were extracted from each included source using a structured extraction matrix. The matrix recorded the author, year, country or region, type of source, governance area, AI application, key finding, identified barrier and relevance to South African municipalities. This made it possible to compare studies across different contexts without losing sight of the research question. Aldoseri, Al-Khalifa and Hamouda (2023) argue that AI depends heavily on data integration and strategy, which made data governance a key extraction category. Sources dealing with fraud detection, procurement monitoring and financial accountability were coded separately from those dealing with citizen engagement, service delivery and ethical governance. This process made the synthesis more systematic because evidence was not simply summarised source by source. Instead, it was organised according to the contribution each source made to understanding AI-supported accountability and transparency in municipal governance.

The synthesizing method used was thematic since the objective of the researcher was to identify similarities in the selected literary works. The themes are AI and accountability, AI and transparency, barriers to adoption, and governance ethics. Madan & Ashok (2023) emphasize the importance of conducting systematic reviews of AI applications in public administration if there are factors associated with adoption linked to future policy recommendations. In this study, thematic synthesis also allowed theory to be integrated into the analysis. The Technology Acceptance Model guided the interpretation of user readiness, perceived usefulness, perceived ease of use and resistance to AI systems. Institutional Theory guided the interpretation of regulatory pressure, municipal norms, oversight expectations and legitimacy concerns. The synthesis therefore moved beyond description by showing how technical, organisational and institutional factors shape AI adoption in South African municipal governance.

Table 3: Thematic Synthesis Framework

Main theme	Related sub-themes	Link to theory
AI for accountability	Fraud detection, audit support, anomaly detection, procurement monitoring	TAM: perceived usefulness
AI for transparency	Open data, dashboards, citizen platforms, service tracking	Institutional pressure
Adoption barriers	Skills, data quality, funding, infrastructure, organisational resistance	TAM and Institutional Theory
Ethical governance	POPIA, bias, explainability, oversight, redress mechanisms	Institutional Theory

Data Analysis

Thematic analysis was used to identify, organise and interpret patterns across the 43 included studies. The analysis began with repeated reading of the selected sources to understand their focus, methods, findings and

relevance to the study. Braun and Clarke (2022) describe thematic analysis as a flexible method for identifying meaningful patterns across qualitative evidence. For the current research, manual coding of the collected literature was carried out based on the coding table. The initial codes generated include fraud detection, procurement supervision, participation of citizens, use of chatbots, integration of information, technology, employee competency, POPIA, algorithmic discrimination and trust issues in the public. All these codes were further divided into categories that related to the research questions posed in this study. This approach avoided an occurrence where the findings of the research would be solely reliant on individual instances rather than patterns.

Theme development followed a staged process. First, descriptive codes were generated from the selected studies. Second, similar codes were grouped into wider categories, such as accountability, transparency, adoption barriers and ethical governance. Third, each category was checked against the research question to ensure that it contributed directly to the study. Fourth, the themes were reviewed through the theoretical framework so that the analysis reflected both practical and institutional issues. Henman (2020) shows that AI can support public service improvement, but also creates risks that require careful governance. This point shaped how the study interpreted the evidence. AI was therefore not analysed only in terms of efficiency. It was also assessed in terms of transparency, public value, legal responsibility and implementation readiness. This approach strengthened the analytical depth of the review and responded directly to the methodological concerns raised by reviewers.

Reliability, Validation and Theoretical Interpretation

Reliability was strengthened through consistent application of the inclusion criteria, screening rules, extraction categories and thematic coding framework. The coding process was checked by comparing each theme against the included studies to ensure that the theme was supported by sufficient evidence. Where studies offered different interpretations, the review did not force agreement but recorded the difference as part of the analysis. For example, some sources emphasised AI's ability to improve public service efficiency, while others warned about bias, privacy and accountability risks. Wirtz, Weyerer and Sturm (2020) caution that AI governance requires clear safeguards because automated systems can create new forms of administrative risk. This type of contrast improved the quality of the synthesis because it allowed the study to identify both opportunities and limitations. The analysis therefore remained critical rather than simply supportive of AI adoption.

The theoretical interpretation was made using Technology Acceptance Model and Institutional Theory. In this case, TAM helped to understand why municipal officials might accept AI if they see its usefulness, ease of use, and supportiveness towards their activities. Meanwhile, Institutional Theory helped to comprehend why municipal governments would choose either to embrace or reject AI due to such reasons as audit requirements, policy guidelines, professionalism standards, public opinion, or the desire to imitate the best practices adopted by superior performing organizations. Indeed, according to Mhlongo and Thomas (2024), South African local government experiences disparate readiness for digital transformation. Therefore, the theoretical interpretation allowed connecting the methodological framework to the overall research discussion. AI can facilitate accountability and transparency in any institution where the relevant users have enough skills, technical resources, and governance practices to apply AI responsibly.

RESULTS

The systematic review generated four main findings on the role of artificial intelligence in enhancing accountability and transparency in South African municipalities. The reviewed evidence did not show AI as a complete solution to municipal governance failure. Instead, it showed that AI can support specific governance functions where the right institutional conditions are already in place. They include availability of high-quality data, qualified local government employees, codes of ethics, supervision, and follow-up actions in case any danger arises. From the results, AI has more ability to help in certain aspects, including fraud detection, interaction with citizens, fusion of data, and early warning systems. However, the usefulness of AI is reduced where municipalities still depend on fragmented records, manual processes and weak internal controls. The findings therefore point to a cautious but practical conclusion: AI can strengthen accountability and transparency, but only when it is introduced as part of wider governance reform.

Table 4: Thematic Results Matrix

Theme	Type of studies reviewed	Key finding	South African municipal implication
Fraud detection and financial accountability	Public finance, procurement and risk-management studies	AI can identify anomalies, irregular patterns and high-risk transactions	Useful for audit support, procurement monitoring and early detection of irregular expenditure
Citizen engagement and service responsiveness	E-government, chatbot and digital service studies	AI can improve response times and reduce routine administrative pressure	Useful where municipal query systems are slow, fragmented or understaffed
Data integration and real-time governance	Data governance and digital transformation studies	AI depends on clean, interoperable and updated data systems	Municipalities must modernise records, billing systems, procurement data and complaint platforms
Adoption barriers	Public sector AI adoption and local government readiness studies	Infrastructure, skills, funding and organisational resistance remain major barriers	AI must be phased, capacity-driven and adapted to different municipal readiness levels
Ethical and public value risks	AI governance, POPIA and algorithmic accountability studies	Bias, privacy, opacity and unclear responsibility remain serious risks	POPIA compliance, human oversight, explainability and citizen redress must be strengthened

The first finding is that AI can support municipal accountability by improving the detection of financial irregularities. The reviewed studies showed that AI-enabled systems can scan large volumes of financial and procurement data to identify unusual transactions, repeated supplier risks, duplicate payments, abnormal pricing patterns and suspicious procurement behaviour. This is important for South African municipalities because many financial weaknesses are usually detected after damage has already occurred. AI can therefore help shift accountability from delayed detection to earlier warning. However, this benefit depends on whether municipal transaction records are complete, standardised and regularly updated. Where financial data is fragmented or inaccurate, AI alerts may be unreliable. The finding therefore suggests that AI-supported fraud detection should not be treated as a replacement for auditing. It should rather be used to strengthen audit preparation, internal monitoring and early investigation of high-risk activities.

The second finding is that AI can improve transparency by making municipal communication more responsive. The reviewed evidence showed that chatbots, virtual assistants and automated complaint-routing systems can help municipalities respond faster to routine citizen queries. These tools can assist with billing questions, service interruptions, refuse collection schedules, application tracking and complaint updates. This can reduce pressure on overstretched municipal staff and improve citizens' access to basic information. However, the finding also showed that AI-based communication must be used carefully in unequal digital environments. Many residents still rely on walk-in offices, ward councillors, call centres or community meetings to access municipal information. Therefore, AI should not replace traditional communication channels. A combination strategy will be more appropriate here because although digital media offer quick access, there are also traditional services that can be accessed face-to-face and through telephones. The third lesson concerns the fact that the performance of AI technology is very much determined by municipal data.

The reviewed studies showed that AI performs better where institutions have clean, complete, interoperable and updated records. This is a major issue for South African municipalities because many still operate with disconnected systems for finance, procurement, billing, asset management, complaints and service delivery monitoring. When these systems do not communicate with each other, AI tools may produce incomplete or misleading results. For example, an automated procurement-risk system may fail if supplier records, invoice data and payment histories are not properly linked. The finding therefore shows that data modernisation must come before advanced AI implementation. Transaction logging, unique identification, standardizing the format of reports, and reliable digitization are essential characteristics that should be included in municipal operations. The absence of these basic components will result in another generation of errors in municipal governments due to the introduction of AI.

Fourthly, from the literature review, it becomes evident that there are institutional, human, and financial barriers to the adoption of AI rather than technical barriers. In reality, poor infrastructure, lack of resources, lack of skills among staff members, and resistance within the organization are the barriers that hinder the implementation of AI in governmental organizations. These barriers are typical in municipal governments where there are budgetary constraints and pressure associated with efficient service delivery. Besides, the lack of skills among staff members to comprehend the results of AI systems may hamper their implementation in the organization, and the inability of

managers to know how to react based on the results generated from AI systems can be another reason for its failure. Organizational resistance is another factor that prevents the implementation of AI. Some organizational members believe that the implementation of AI may threaten their jobs or serve as a tool for spying on staff members.

The fifth challenge pertains to ethics and public values related to artificial intelligence. During the process of conducting a literature review, it was evident that the issues surrounding AI include privacy, bias, interpretation, accountability, and redress for citizens. The issue is important because decisions made by municipal governments affect how citizens can obtain necessities, bill corrections, poor people, housing, and complaints. If an AI system produces a wrong recommendation, citizens must know how the decision was made and how to challenge it. This means that human oversight must remain central. Municipalities should not allow automated systems to make sensitive decisions without review. The finding therefore shows that ethical governance is not an optional add-on. It must be built into AI implementation through clear rules on data protection, explainability, appeal procedures, oversight responsibility and public communication.

DISCUSSION

AI as a Governance Support Tool, Not a Governance Solution

In accordance with the results, one might say that AI ought to be considered a tool for facilitating good governance but not the means of solving problems related to the failure of governance when one needs to control whether municipal authorities manage to undertake the right steps and actions concerning their duties. As was mentioned above, AI is able to help in finding any irregularities in the process of financial and other transactions as well as managing fragmented information and communicating with citizens in order to improve the level of services provided. Nevertheless, when talking about the consequences of such events, AI is not capable of doing anything without taking appropriate actions. According to Henman (2020), only with the help of the adequate framework for governance can AI be able to contribute to enhancing the performance of public services. In this context, Henman (2020) emphasizes the importance of ethical leadership, which is very important in the case of South Africa.

This interpretation also rules out the possibility of interpreting AI in a promotional way. The literature reveals the strengths of AI, but it also suggests that adopting AI may result in the reproduction of issues in an ineffective governance framework. As mentioned by Wirtz, Weyerer and Sturm (2020), there are several challenges posed by AI because there are no guidelines on how to ensure accountability in public agencies. Furthermore, according to Bouchetara, Zerouti and Zouambi (2024), AI can be helpful in enhancing risk management in the financial sector. Nevertheless, the effectiveness of the process and data collection should also be taken into account. In regard to the use of AI in South African municipalities, the technology is not expected to replace any existing inefficient mechanisms. On the contrary, the implementation of AI should help improve internal controls, effective governance process and accountability of decisions made by municipalities. Here, the key aspect is that technology should be embraced depending on the goals of governance. For example, South African municipalities need to establish the issue related to accountability that AI can address.

Interpreting Adoption Barriers through TAM

The Technology Acceptance Model can help to explain the reasons why local government officials would choose to adopt or reject artificial intelligence solutions. Based on the theory of Technology Acceptance Model, the adoption of a particular technology is contingent upon its usefulness and ease of use. From the research done by Mthombeni (2024), it can be concluded that the adoption of technology in South Africa is contingent upon the attitude of users, self-confidence, and usefulness. It implies that the findings will have significant relevance for the area of study since municipal organizations already face certain problems. Thus, in such a case, the officials will see artificial intelligence technology as a useful technology that can make their jobs easier. It will help them detect abnormalities and track the provision of services. It means that the results show that the training provided for local government officials needs to include information about how the technology can be used to facilitate their work.

In the same regard, the technology acceptance model (TAM) shows the importance of the existence of skill gap and uncertainty of the organisation at the adoption phase. Although technology is available, the adoption of the technology will not be easy without trust and lack of understanding of the technology. The readiness of the organisation can be determined based on the competency of the workforce, commitment, and confidence according to Felemban et al. (2024). As per Thusi & Chauke (2023), the public sector in South Africa suffers from skills needed for the digital revolution. It is therefore important for the municipalities to ensure that users are ready for the adoption of AI technology to ensure accountability using AI. The user training should include analytical thinking and ethics of using citizen's data among other aspects.

Interpreting Municipal Readiness through Institutional Theory

Institutional theory helps in explaining the process of how the adoption of AI technology is dependent upon the presence of institutional pressures to govern institutions. Local governments are expected to function within an environment where there will be effects of audits, regulations, conditional funding, procurement processes, municipal council governance, and attention from the public. As per Kuziemski & Misuraca (2020), the impact of AI governance within the public domain is influenced by the democratic and institutionalism principle. There is constant pressure on South African municipalities for managing their finances and their consequences as per PMG (2024). Such kinds of pressures could help local governments to adopt AI technology by integrating monitoring systems like procurement, expenditure, and service delivery systems. It should be noted that institutional pressures do not always contribute to the proper adoption of AI technology. There are instances whereby local governments might embrace advanced technology to show that they are working towards reformations without affecting their operations.

Similarly, Institutional Theory explains why it would be difficult for cities to implement international AI applications without making proper analyses of the appropriateness of the solutions within the local setting. It would make sense to take lessons from Brazil and Nordic cities, although they have different institutions. In this regard, Langevin et al. (2022) reveal that procurement AI adoption in Brazil has been shaped by certain changes within its procurement procedures. Additionally, according to Mhlongo and Thomas (2024), there exists huge disparities in terms of ability to use advanced technologies among local government agencies in South Africa. Such an imbalance needs to be addressed because copying international solutions without establishing the required institutions will be ineffective. In other words, procurement AI cannot work well if there is inadequate knowledge about the suppliers or transactions and procurement officials lack the necessary skills to analyze risk factors.

Limits of Transferring Global AI Models to South Africa

As one can see from the literature review, global AI model applications are very useful cases; however, their replication in the case of South African municipalities requires careful consideration. The case studies of chatbot application in the Nordic region allow one to understand how AI can help solve regular issues, thus freeing up administrative tasks for fast problem-solving. However, it should be mentioned that the AI cases discussed above take place in the setting of a developed IT infrastructure and administration system. As Andreasson and Stende (2019) point out, the research on AI conducted by Nordic municipalities relies on their particular institutions. However, according to Helsper (2021), digital inequality can prevent some segments of society from utilizing online government services. One may suppose that the same thing can happen in South Africa since the internet access varies throughout the region. Moreover, when implementing AI models in the local language, one may consider the use of local languages by the municipalities where people only speak local languages.

This is also the case when speaking about financial auditing applications which rely on AI. As was mentioned above, referring to the practice of procurement monitoring software, AI algorithms are capable of detecting anomalies in data patterns but need to have accurate information and means of enforcing its processing. As Awosika et al. (2024) note, the most important aspect at this stage is to ensure the understanding of the system by its users to help them trust the results provided. In addition, as noted by Aldoseri et al. (2023), reliable integration of data is required to conduct any kind of advanced analysis and interpretation of results. It seems like there are multiple municipalities in South Africa that do not have well-developed processes of managing their information. The issues may include the problem of fragmentation, poor quality of data and inadequate internal controls over it. Thus, an AI-powered auditing application might provide inaccurate information because of this. Still, it does not mean that South African municipalities must never use AI technologies.

Ethical and Public Value Implications

Ethical governance becomes a pertinent concern in the usage of AI technology in the municipal government because of the consequences it may cause for the people involved. Potential areas where AI may be used by the municipality include billing inquiries, aid to the underprivileged, prioritization of complaints, warning about procurement risks, and service delivery monitoring. As per Wirtz et al. (2020), there is a possibility that applying AI in the public sector may pose some potential risks due to inadequate ethical governance of automation systems and their opaqueness. Mbonye, Moodley, and Nyika (2024) believe that the need for implementing POPIA in AI cannot be undermined. Nevertheless, ethical governance of AI must not only be based on the implementation of the regulations but also allow people to access data concerning the implementation of AI and what to do when their automated decision affects them adversely.

Public value criteria should also apply to determine the right time and purpose for the use of AI. The implementation of the system will make municipal services more efficient; however, efficiency does not equate to fairness. Fear may arise from the implementation of AI due to any acts of discrimination against the populace as argued by Gerlich (2024). Ethical principles of public administration indicate that the needs of citizens have to be protected via good governance. The opinions of the citizens, workforce, CSOs, and oversight institutions need to be solicited before AI can be applied in various sectors of the community. This will ensure the development of principles to address issues relating to consent, language support, complaints, algorithms, and mistakes. This research paper will make a significant contribution towards the creation of knowledge on the subject of AI as public administration. The success of this paper shall be measured in terms of efficiency, fairness, accountability, transparency, and trust.

RECOMMENDATIONS: STRATEGIC PATHWAYS FOR AI INTEGRATION

Recommendation 1: Strengthen Digital and Data Infrastructure

The introduction of AI in South African municipalities will be more effective when digital and data infrastructure improvement comes first. This means upgrading the municipality's financial, procurement, billing, asset management, and complaint management systems to allow proper storage and integration of information for analysis. Data strategy is crucial for the effective functioning of AI, as per Aldoseri, Al-Khalifa, and Hamouda (2023). This is because the lack of data strategy that ensures data integration causes inefficiency in automated analysis. In regard to the data infrastructure improvement, there are aspects that need improvement by municipalities to promote AI governance. These include simplifying transactions, assigning identification numbers to suppliers and services, ensuring Internet availability, and promoting system compatibility. It is evident from this statement that the need for data infrastructure improvement relates to the claim that AI cannot ensure accountability owing to inadequate record-keeping.

Recommendation 2: Build AI and Data Governance Capacity

Capacity building should be done in such a way that the workers within the local municipalities have the ability to understand, implement and evaluate AI systems based on decision-making. Some of the competencies that would be needed here include data management, fraudulent alert analysis, digital ethics, cybersecurity, procurement monitoring, and AI product management amongst many others. As per Shiohira (2021), there arises a need for capacity building in the situation when there is a need for new skills among the public servants who work in technological systems of data. There could also be capacity building through cooperation among the local municipalities, universities, software firms and professions which provide training, mentorship and innovations in the local areas. However, it is only training which will not address the problem at hand in South Africa, due to skill deficiency arising out of non-existent career pathways and poor workplace conditions as stated by Thusi & Chauke (2023).

Recommendation 3: Establish Ethical and Legal AI Governance Frameworks

There would need to be an ethical and legal framework developed by the local authorities on the application of AI technology in areas that could potentially affect the society and the accounting process. The development of this framework would involve consideration of whether the specific AI technology meets POPIA requirements, privacy of individuals, algorithm testing for any biases and decision-making accountability in AI technology. As Mbonye, Moodley and Nyika (2024) observe, POPIA is going to be of vital importance when considering the issues related to the use of AI technology owing to its function of providing the legal framework governing data collection and management. Besides, in addition to the data protection aspects and others involved in the AI governance, POPIA would also contribute towards decision-making transparency and accountability.

Recommendation 4: Adopt Phased AI Pilot Projects

The introduction of AI into municipal councils of South Africa needs to be done gradually through pilot projects instead of adopting AI on a large-scale basis from the very beginning. This can be achieved by conducting pilot projects in different fields such as procurement, payment processing, audit preparation, complaint resolution, and inquiry resolution chatbots. Madan & Ashok (2023) have argued that successful implementation of AI technologies in public administration organizations requires readiness at both implementation and organizational level. The reason behind the effectiveness of pilot projects is that the municipal council would be able to assess the

effectiveness of the AI technology being used, gauge the readiness of the workforce towards AI adoption, and evaluate public reactions to the adoption of the technology.

Recommendation 5: Promote Inclusive Citizen Engagement

Citizens should be part of the process during planning and implementing the AI-enabled service delivery systems. This can be through consultative platforms, citizen participation forums, translation into other languages, education in digital literacy skills, and the understanding of how the AI systems will impact access to the services. As Helsper (2021) notes, an increase in the digital divide will result in higher levels of exclusion in the transition to digital delivery of public services where access, digital literacy, and cost issues are not addressed. It is important, therefore, that the municipalities consider both approaches to service delivery whereby digital AI technology allows rapid communication, yet citizens have a chance to visit physically, use phone centers, ward committees, and citizen participation platforms.

CONCLUSION

The main research question has been answered based on the results that the use of artificial intelligence could make municipalities in South Africa accountable and transparent as long as the technology is used as a tool of governance and not only for its implementation for the sake of the process. According to the results, there are several areas in which AI technology can be applied within the municipalities to make them more effective, including fraud detection, procurement monitoring, citizen services chatbots, data aggregation, and early warning systems. However, as emphasized by Henman (2020), proper governance would allow better service delivery using AI technology. The results have shown that AI technology does not replace political will, ethical leadership, consequences management, and human judgment.

The most significant lesson that could be gleaned from the literature review of the topic under investigation would be the notion that while the technology might be applicable in practice, its implementation would depend on the municipality's readiness for AI technology. It would be imperative for municipalities to ensure that information, technology, personnel, ethics, and regulations are sufficient for AI technology to work effectively. According to Mhlongo & Thomas (2024), Fourth Industrial Revolution technologies have been applied unevenly by municipalities in South Africa because of their capability. Therefore, it would be impossible to come up with a universal policy regarding the application of AI technology. Some municipalities might be ready for advanced AI technology, whereas others would need to start from scratch.

The theoretical contributions of the study come from the intersection between Technology Acceptance Model and Institutional Theory. In the first case, it became possible for us to comprehend the factors that would make municipal authorities accept technologies in question when perceiving them as valuable and easy-to-use solutions, while in the second one, we were able to take into account the importance of the elements such as audit pressure, policy expectations, public attention, and organizational practices in relation to the development of AI acceptance and rejection in the public sector. As Madan and Ashok (2023) note, AI adoption in public administration is influenced by technical and institutional factors.

In addition, the research adds value through providing conceptual synthesis, instead of providing primary empirical data from the field. It was crucial to highlight this weakness since the review did not conduct interviews, survey analysis, or municipal case studies. Rather, it conducted literature reviews and policy analysis on AI opportunities, challenges, and strategic conditions for implementing AI in the governance of South African municipalities. The above limitation needs to be noted since the results do not capture the firsthand experiences of all South African municipalities. Despite the above limitation, the research forms a good starting point for policy discussion and empirical investigation.

Research into the application of AI technology within some municipalities in South Africa will provide information about the perceptions of AI held by the municipal managers, the effect of AI technology on the citizens due to the provision of the service, and the effect of AI technology on the auditing process. The deployment of AI technology creates various ethical and legal challenges that, as highlighted by Mbonye et al. (2024), need to be explored further in terms of South Africa. Some possible areas of investigation could include algorithmic accountability, compliance with POPIA, public trust, digital divide, and citizen complaints. In the future, the successful application of AI technology as an aid to the local government will depend not only on the technical advancements of AI technology but also on the proper application of AI technology to help their citizens.

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