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Municipal governance and planning toward addressing housing problems to improve access to adequate housing in Maseru and Johannesburg: an exploratory factor analysis

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Both Lesotho and South Africa inherited British and apartheid spatial planning, which leveraged on segregation of the urban poor specifically black Africans from the cities to the urban periphery and this has resulted in multiple housing inadequacies. The primary focus is on Maseru and Johannesburg which are the economic capitals of Lesotho and South Africa, respectively. The two cities are experiencing rapid immigration of people who are in search of job opportunities. This scenario is followed by the need for housing, especially for low-income earners. The researchers aimed to explore factors determining the scale of municipal strategies in the development of adequate housing. Specifically, it aims to identify the scale to which the authorities apply an effort in implementing the planning strategies to address the housing problems and improve access to adequate housing. An Exploratory Factor Analysis (EFA) research method was used, factor rotation was done through varimax rotation, the results were validated through a Kaiser-meyer olkin and Bartlett's test. The study participants included the 201 residents in Qoaling and 201 residents in Diepsloot experiencing the housing problems and conditions under the city of Johannesburg metropolitan municipality and Maseru Municipal Council, the participants were selected through a purposive sampling technique. Result of the findings shows that the environmental conditions in both study areas are different in extent. Whereas in Maseru there are no formal land use plans and regulation, hence the people practice informal subdivision of land which results to informal settlements. The study recommends that municipalities should strengthen access to basic infrastructure and improve waste management techniques which are identified by the residents in both contexts as one of the key issues affecting the housing adequacy. The study goes beyond the descriptive analysis of housing inadequacies as it reveals the structure of these challenges by exploring the patterns of the constructs.

KEYWORDS

Lesotho, South Africa, land use planning, adequate housing, municipal efforts, policies, exploratory factor analysis

Introduction

Many years after the right to adequate housing for all was established in the Universal Declaration of Human Rights, countless individuals across the globe still lack access to suitable housing. Approximately 1.6 billion people are residing in substandard housing, with around one billion of them living in informal settlements or slums (UN-Habitat, 2022). It is crucial to acknowledge that many impoverished nations, particularly in Africa, face the most severe housing challenges (Terminski, 2011:222). Significantly, the rapid urbanization in major cities of the developing world has exacerbated these housing issues. As noted by Akinluyi and Adedonkun (2014:262), low-income individuals encounter serious housing deficiencies; these challenges significantly affect both citizen well-being and economic development, making housing to be recognised worldwide as the most fundamental human necessity.

According to the United Nations (2020:119), Sub-Saharan Africa has the highest rate of slum populations, with 56 percent of individuals in urban areas living in informal settlements. Remarkably, in certain African nations, three-quarters of the population resides in low-income informal neighbourhoods, resulting in a significant prevalence of slums in these regions. It has been suggested that while urbanization presents genuine challenges on a global scale, it can also offer opportunities when properly managed. This issue appears to be exacerbating spatial, social, and economic disparities, as urban residents struggle to access decent housing, education, and healthcare services, which in turn contributes to the growth of informal settlements (United Nations, 2020:120).

The way cities are planned, regulated, and designed significantly influences the extent of inequalities they experience. Therefore, it is crucial to highlight that uncontrolled urban expansion poses a significant challenge in the global south due to swift population growth. Moreover, unregulated development leads to inadequate public services and restricts the overall quality of life. Consequently, the study explores the municipal governance and planning strategies toward addressing the housing problems in Maseru and Johannesburg. However, we do acknowledge that various factors shape municipal planning, hence having a direct impact on how municipalities formulate strategies to address the housing challenges and problems, hence lack of access to adequate housing. Holistically, these factors are related to the socio-economic conditions, institutional capacity and infrastructure capacity. It is important to note that the existing infrastructure conditions, availability of land and the urban form may affect municipal planning approaches to alleviate housing challenges (Patience and Nel, 2021). Further, planning priorities and strategies are shaped by population trends and income distribution (Khumalo, 2021). Notably, the governmental and technical capacity is also a key determinant of planning authority; these includes the availability of policy and regulatory framework that provide a basis for land use planning and housing development (Amin et al., 2021). These dimensions affect the way municipal planning addresses the housing challenges in any given context. The study therefore provides insight into how different factors uniquely affect the two municipalities in City of Johannesburg Metropolitan municipality and Maseru Municipal Council. It is worth noting that municipal planning is based on the strategies applied by the local government to guide development and land use (Balsas and Piracha, 2025). It plays a central role in improving quality of life and the urban form. And, in

South Africa the Spatial Planning and Land use Management Act 2013 provides a legal framework for municipal planning, which is further entrenched by the development of the municipal land use schemes (Heukelman and Cilliers, 2025). Although, this is true in South Africa, in context Lesotho adopts a much more centralised approach where the municipality and local councils do not have the town planning or land use schemes, instead the national laws are used to advance municipal planning strategies to guide development. Therefore, the study raises an important question about the need for municipal planners to understand the context at which they do their planning and how their decisions may address or exacerbates the housing problems. The study adds on the growing literature of the role municipalities and governments in improving access to adequate housing for low-income households. However, it was important to situate our study in the context of a cross-national comparative analysis, in providing a comprehensive clarity of how various factors affect municipal governance and planning strategies toward achieving adequate housing in the context of Johannesburg and Maseru. It was prudent to empirically explore the underlying strategies that influence the municipal planning and governance in addressing the housing challenges from the residents' perceptions, hence the use of exploratory factor analysis. The intention was to uniquely add to the growing body of knowledge without delving into the common policy analysis.

Conceptual framework

Adequate housing

For a house to be deemed sufficient, it must encompass more than merely having a roof and four walls; certain criteria must be met, including habitability, affordability, location, accessibility, cultural appropriateness, and security of tenure. Therefore, the housing is considered inadequate if the residents lack legal protection and are vulnerable to eviction and harassment (UN-Habitat, 2014:3). Consequently, housing conditions closely relate to the right to good health, and it is essential to acknowledge that the right to adequate housing encompasses various aspects of one's livelihood, including access to clean water, basic infrastructure, and natural resources (O'Connor et al., 2024). Notably Rapelang et al. (2018) argue that adequate housing has long been measured against artificial standards and norms that pertain to both natural and human-made rural environments. Nevertheless, there are several components that make up adequate housing, we discuss security of tenure, cultural adequacy, housing accessibility, availability of basic services, habitability and housing location. Regarding security of tenure it is worth noting that it is closely linked to property rights, as these rights establish the legal foundation upon which security of tenure functions; it is important to highlight that when property rights are clearly defined and articulated, people are more inclined to make investments in their land (Holland et al., 2022). Likewise, individuals are reluctant to invest in their properties if they are apprehensive about potential evictions by government entities (Huchzermeyer, 2001). This situation may well explain the informality within the study areas, where the researchers observed the greater number of informal structures.

Agrawal (2022) notes that access to housing refers to how available housing is for all individuals, including those who are impoverished

and homeless. This observation is important especially in the context of housing accessibility for low-income households in African cities which are faced with significant housing informality. Accessibility is closely related to liveability; hence a dwelling is considered inadequate if it does not withstand health and structural risks (Mchunu and Nkambule, 2019). In addition, when services such as the social amenities and job opportunities are accessible to the residents, this is a component of adequate housing. That is why, Rapelang et al. (2018:699) suggest that individuals may take to the streets to voice their discontent over inadequate service delivery, a situation that frequently occurs in South Africa when people seek Reconstruction and Development Programme (RDP) housing. Notably, there has been a growing challenge of unaffordable housing to the low-income households and housing affordability is an important aspect of adequate housing. Bates (2025) note that when housing is unaffordable, individuals often resort to living in substandard conditions because they cannot afford to rent or build better dwellings, and the scarcity of housing also directly influences pricing.

Housing must be resilient to threats and adhere to safety standards for it to be considered adequate hence there is a connection between accessibility, health, habitability of housing (Foster et al., 2022). However, it is apparent that in South Africa, many housing programs have resulted in non-habitable homes, leaving numerous individuals exposed to health risks due to RDP houses. This issue arises from the use of substandard materials and construction practices, leading to problems like cracked walls and leaking roofs, which endanger residents' health by increasing the risk of respiratory conditions. We note that despite the government attempting to provide housing for the low-income households, RDP houses are imposed products which do not provide optimal development solution and does not fulfil essential standards. In addition, the location of housing is a key factor in aligned with the adequate housing, it is important to note that in many urban environments, such as cities and towns, housing is often situated in precarious areas vulnerable to disasters like rock falls, floods, and landslides. People choose to construct homes in these risky locations due to their inability to obtain land in safer, well-surveyed regions. Consequently, Kothari et al. (2006:10) points out that insufficient housing often stems from people's lack of access to land, which brings about several challenges that lead to inadequate housing. This situation is observed in Qoaling and Diepsloot, where in Qoaling low income households built houses in locations susceptible to rockfall, whereas in Diepsloot the settlement itself is located at the city periphery away from employment opportunities.

Methods and materials

Research design

The study adopted a quantitative approach, which was grounded in Exploratory factor analysis research design to identify the latent dimensions that affect municipal planning in addressing housing problems in the rapidly growing cities.

The study participants include 201 residents of Qoaling, Maseru and Diepsloot Johannesburg. These samples are adequate because with exploratory factor analysis, samples between 50 and 384 are regarded to be sufficient (Pearson and Mundfrom, 2010). It is worth noting that a settlement is made up of residents hence it was important to identify

a suitable sampling method to select the participants. The researcher used a purposive sampling technique to select the participants from Qoaling and Diepsloot residents. The selection was based on the participants location within the study areas and the socio-economic characteristics. The questionnaire was designed to collect quantitative data included on a Likert scale. The design of the questionnaire was informed by extensive reading of policies and literature. A 5-point Likert scale was adopted, the scale entailed the following points: (1) doing enough, (2) Somewhat doing enough, (3) Not Sure, (4) Should be enough (5) Not doing enough. These items described the municipal governance and town planning efforts by the municipality/Council in addressing housing problems in the quest to improve access to adequate housing. A 5-point Likert scale provides a balanced response to the questions since it has a neutral mid-point (Joshi et al., 2015).

Concerning the missing values, the researchers minimized the risk of the "I do not know" responses by employing a 5-point likert scale, it is important to note that a 5-point likert scale offers a neutral midpoint which can normally be regarded as a missing value, hence missingness was proactively addressed through the use of a 5-point Likert scale in this paper (Denman et al., 2018). We employed an Exploratory Factor Analysis (EFA) to analyse the data with the intention of exploring the patterns that would otherwise not be immediately observed. EFA was key in this study as it assisted in discover empirically, the key factors related to municipal planning and governance including infrastructure challenges, housing affordability and policy challenges. Prior to conducting an EFA, we first tested the suitability of our data for factor analysis before the extraction of the constructs by conducting the Kaiser-Meyer Olkin (KMO) and Bartlett's test of sphericity. Firstly, Bartlett's test of sphericity dictates that for the sample to be considered suitable for factor analysis $p > 0.05$ and the KMO value must be over 0.6.

After testing the suitability of the sample, we then proceeded to extract the data using principal axis factoring, the researchers used this method because the data was not normally distributed. Thereafter, a Kaiser-Meyer criterion was applied to decide on which factors must be retained for factor analysis, and only factors with eigenvalue of 1 or more were retained for factor analysis.

In addition, Varimax factor normalization was used to rotate the factors, this method presents the results in a simple structure hence we chose it to rotate the factors (Goretzko and Sellbom, 2023). To give sense and clarity to the constructs for interpretation purposes, we subjectively assigned labels because the main intention was not to test any theory but to explore the patterns within the constructs.

Case studies: Johannesburg and Maseru

Johannesburg

Johannesburg serves as the economic center of both the Gauteng province and South Africa (Risimati et al., 2021:2). Notably, numerous large corporations in South Africa are based in Johannesburg. In the year 2000, five municipal regions were combined to form the current metropolitan area, which spans approximately 1,644 km². Additionally, the municipality has a population density of around 1962 individuals per km², with a total population of roughly 3.2 million (City of Johannesburg, 2022). This indicates that a significant number of people

in the metropolitan area require suitable housing. Nevertheless, Johannesburg ranks as one of the metropolitan regions in South Africa with the highest prevalence of informal settlements. Johannesburg is in the Gauteng province, this city experiences an influx of population which mainly settles in the townships such as Diepsloot (Figure 1). Upon their arrival in Johannesburg, the immigrants need housing, and this need for housing outpace the supply.

Diepsloot was created as a short-term refuge for individuals who had previously resided in the informal settlements of Sevenfontein and Honeydew. Initially, this location accommodated 200 households that were evicted from Sevenfontein. In 1996, it continued to serve as a receiving area for those who had been forced out of informal settlements (Benit, 2002). Although RDP homes began to be built in 1999, it is crucial to recognize that the settlement currently features three types of housing: shacks, bonded houses located in extension 3, and RDP houses. A significant and noticeable problem is the presence of litter throughout the area, and shacks constitute most of the housing within the settlement. Consequently, there is an overall deficiency in infrastructure and services, with most roads remaining unpaved. The settlement is significantly dense as shown in Figure 2, hence it can be deduced that this place houses an enormous number of people.

Maseru

Maseru serves as the capital of Lesotho and also the capital of the Maseru district, situated along the border with South Africa,

marked by the Caledon River. It is the most populous city in Lesotho, with a reported population of 330,760 according to the Bureau of Statistics in 2016. Additionally, Maseru acts as the primary economic centre of Lesotho, housing the government offices and administrative functions. It's important to highlight that the city's rapid growth has created a significant demand for housing. If the authorities fail to address housing needs, residents may turn to informal housing solutions, which often lack quality. Consequently, this research focuses on the impact of planning on adequate housing development, specifically examining Maseru and Johannesburg due to their comparable patterns of population growth and their roles as economic centres. Within Maseru, the area of focus was in Qoaling which is one of the most densely populated neighbourhoods in Maseru, with numerous residents living in substandard housing. This community is situated approximately 10 km from the central business district of Maseru. Its proximity to garment factories results in a significant demand for housing in this area, highlighting the necessity for authorities to address this issue (Figure 3).

It is evident that individuals have resorted to constructing homes in precarious locations due to the urgent need for shelter. These buildings serve as clear indicators of the inadequate housing situation in Qoaling, where many residents lack proper sanitation facilities and live in vulnerable areas. The layout of the settlement in Qoaling is irregular and does not exhibit any formal urban planning. Furthermore, the absence of tarred roads in the area complicates access and movement for its inhabitants (Figure 4).

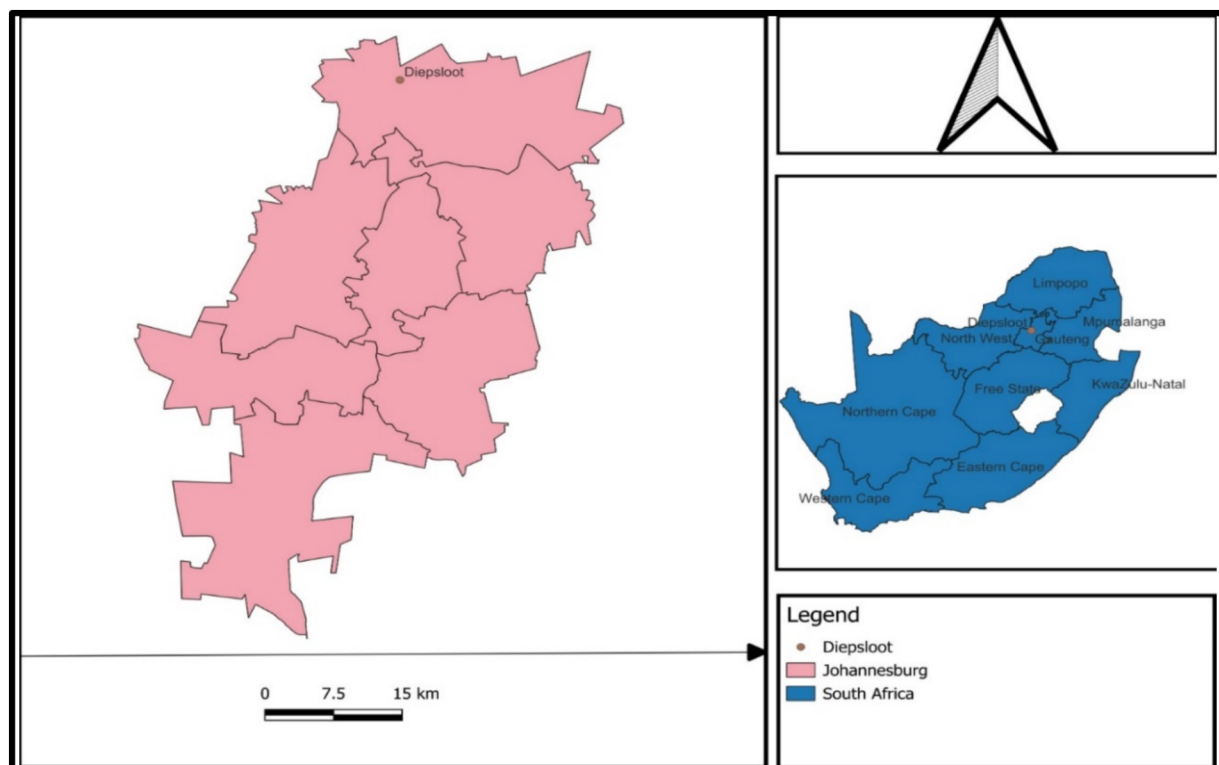


FIGURE 1
Location Diepsloot. Source: Authors 2025.



FIGURE 2
Diepsloot settlement. Source: Google Earth Pro, Map data ©2025 Google.

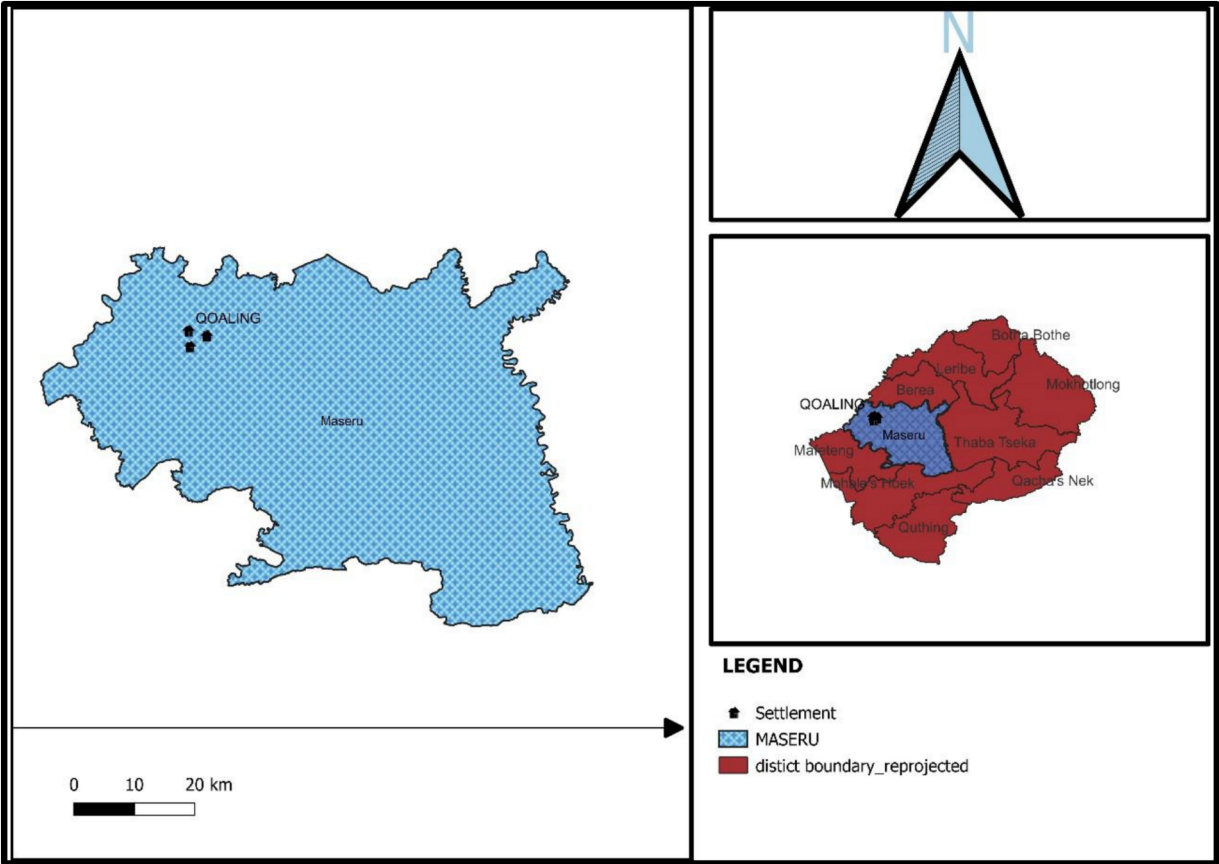


FIGURE 3
Maseru location map. Source: Authors 2025.

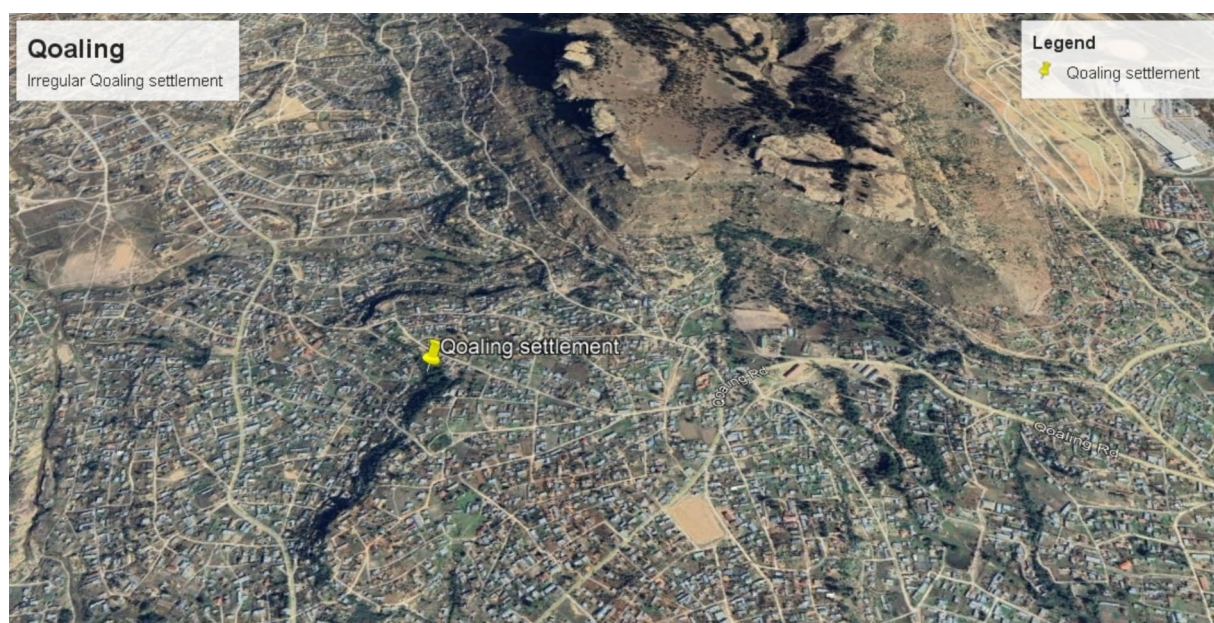


FIGURE 4
Qoaling settlement pattern. Source: Google Earth Pro, Map data ©2025 Google.

TABLE 1 Kaiser-Meyer-Olkin measure (KMO).

KMO and Bartlett's test		Diepsloot	Qoaling
Kaiser-Meyer-Olkin measure of sampling adequacy		0.826	0.759
Bartlett's test of sphericity	Approx. Chi-Square	2080.588	1307.172
	Df	36	36
	Sig.	0.000	0.000

Source: Household survey, 2024.

Results, conclusions and recommendations

This section presents the results of the study, by assessing the suitability and adequacy of the sample and rotated factor matrix (Table 1).

Assessing the suitability and adequacy of the data

Urban planners, municipal officials, and various stakeholders enact different strategies to tackle the housing issues in their regions. The effects of these solutions are experienced and recognized by those who are directly impacted by the housing challenges. As a result, these individuals are in the best position to evaluate whether the government is adequately addressing the issues or not. Thus, to assess if the government is sufficiently addressing the housing problems, the suitability of the sample was evaluated using the Kaiser-Meyer-Olkin Measure (KMO). A KMO value of 0.759 was found for Diepsloot, and 0.826 for Qoaling. Meanwhile, Bartlett's test of sphericity yielded a result of 0.000 for both, which is significant ($p > 0.05$). These findings indicate a correlation among the items, confirming their

appropriateness for factor analysis for the two samples as detailed below.

In examining perceptions regarding the government's effectiveness in addressing housing issues in Diepsloot (Gray colour) as shown in Table 2, a considerable number of participants believe that the government is failing to adequately address these challenges. Hence the result from the findings indicates that: "Poor and inadequate social amenities" (loading = 0.911), "Unsatisfactory environmental conditions" (0.853), "Overcrowding" (loading = 0.814), and "Inaccessible residential area" (loading = 0.806). Regarding factor 2 from the table above, sentiments around "Housing not affordable" (loading = 0.823), "Lack of access to basic services" (0.789), "Severe shortage of housing" (0.741), and "Lack of title deeds/leaseholds" (0.731) indicate dissatisfactions. Interestingly from the results, "Unplanned settlement layout" had notably low loadings, at (0.488) in factor 1 and (0.432) in factor 2, implying that a segment of respondents, compared to other issues, feels the government are doing good job in this area.

The perceptions regarding whether the government is adequately addressing the housing issues in Qoaling (Blue Colour) indicate that the participants believe the government is falling short in its efforts. The items with the highest significance loading include "Poor and inadequate social amenities" with (=0.949), followed by "Overcrowding" (=0.940), "Unsatisfactory environmental conditions"

TABLE 2 Rotated factor matrix.

Municipal planning strategies (MPS)	Diepsloot		Qoaling	
	Factor		Factor	
	1	2	1	2
Housing not affordable		0.823		0.882
Inaccessible residential area	0.806		0.805	0.304
Lack of access to basic services		0.789		0.898
Unplanned settlement layout	0.488	0.432	0.628	0.481
Severe shortage of housing		0.741	0.333	0.771
Lack of title deeds/Leaseholds		0.731		0.700
Overcrowding	0.814		0.940	
Unsatisfactory environmental conditions	0.853		0.936	
Poor and inadequate social amenities	0.911		0.949	
Extraction method: principal axis factoring. a. 2 factors extracted. 8 iterations required.				

Source: Household survey, 2024.

(=0.936), and “Inaccessible residential area” (=0.805). The item with the lowest significance is “severe shortage of housing” (=0.333). For factor 2, the highest loaded items are “Lack of access to basic services” (=0.898), “Housing not affordable” (=0.882), “severe shortage of housing” (=0.771), and “Lack of title deeds/leasehold” (=0.700).

Discussion

For both Qoaling and Diepsloot two factors were extracted using Principal Axis Factoring, which required eight iterations. The results revealed coherent patterns in the perceptions of the residents regarding the municipal planning and governance strategies in addressing housing problems in a quest to improve access to adequate housing in both contexts. In Diepsloot, the results with higher loadings exhibited in factor 1 indicate a strong deficiency in access to infrastructure which affects housing adequacy, whereas high loadings in factor 2 presents a different dimension aligning to housing affordability and tenure related challenges. Although there have been attempts by the municipalities to address these growing housing problems in Johannesburg in particular, according to [Nokulunga et al. \(2018:1698\)](#), the government has not been able to address these housing inadequacies effectively; instead, the RDP has exacerbated the problem, with some homes being poorly built using substandard materials, and many housing developments located on the outskirts of towns and cities where land is less expensive.

In Qoaling a similar pattern in factor 1 is exhibited where the highest loadings confirm the service delivery challenges and in irregular settlement patterns as a key dimension affecting housing adequacy, whereas factor 2 aligns to housing affordability and quantity which indicates that there is a shortage of housing due to affordability issues. This has been a persisting problem in Maseru, as postulated by [Leduka \(2012\)](#) in similar research points out that housing development in Maseru suffers from a lack of formal land use plans, leading residents to engage in informal land subdivision, which impacts the accessibility of settlements. Diepsloot has notably worse environmental conditions, including sewage issues and plastic waste management problems.

Although the environmental conditions in Qoaling are also unsatisfactory, the severity is relatively lower when compared to Diepsloot. Residents reported paying M150,00 monthly for waste collection; however, many cannot afford this fee and resort to burning their waste. Generally, the results display the similar nature of housing problems in rapidly growing cities, and they outline a clear empirical analysis for municipal planning and governance interventions in addressing the housing challenges and barriers to achieve adequate housing.

Conclusions and recommendations

Exploratory Factor Analysis (EFA) to explore the perceptions of the residents on municipal planning strategies in addressing housing to improve access to adequate housing in Johannesburg and Maseru. The EFA analysis exhibited two factor structures in both study areas, the first factor structure aligned with access and basic infrastructure challenges whereas the second factor aligns to settlement patterns and security of tenure challenges, these two structures indicate that the residents regard housing inadequacy to be complex. The results imply that municipalities need to understand how the residents prioritise the housing challenges to effectively implement their governance and planning strategies. It is important to note that regardless of its dependence on non-probability sampling which directly affects generalisability EFA is a robust technique which uncovers latent variables in perceptions in research contexts with limited resources. In terms of contribution, the study provides a perspective which strengthens municipal cross national about housing problems in the context of rapidly growing African cities. We also reckon that this study enhances the alignment between residents' needs and the planning practice therefore strengthening urban governance principles. Furthermore, the uniqueness of this study is entrenched in the use of EFA to analyse the perception of the residents in municipal planning and governance strategies toward addressing the housing problems, and this methodology is rarely used in urban planning and housing research in Southern Africa specifically the under researched

Maseru. The study goes beyond the descriptive analysis of housing inadequacies as it reveals the structure of these challenges by exploring the patterns of the constructs.

Some recommendations related to the municipal governance and planning strategies to improve access to adequate housing include.

Based on the results from the exploratory factor analysis, we recommend that municipalities should strengthen access to basic infrastructure and improve waste management techniques which are identified by the residents in both contexts as one of the key issues affecting the housing adequacy. The municipalities need to establish and enforce inclusive land use planning frameworks to address irregular settlement layouts. The primary concerns for residents in Qoaling are unaffordable housing, lack of access to essential services, poor environmental conditions, and insufficient social amenities. In Diepsloot, the main issues highlighted include inadequate social amenities, unaffordable housing, overcrowding, and difficult-to-reach some residential areas. These issues were recognised by the residents as being overlooked by the government in efforts to resolve housing challenges and enhance adequate housing. The researchers hereby recommend that for any meaningful progress to be seen in Diepsloot, municipal planners need to focus on improving inadequate and poor amenities, managing overcrowding, and address unsatisfactory environmental conditions by ensuring that the existing city by-laws are efficiently employed. In contrast, for Qoaling, the recommendation is for municipal planners to tackle the affordability of housing, enhance social amenities, and improve access to essential services by engaging in settlements upgrading programmes and ensuring that the city has an updated development plan. Lastly, the study emphasises the need for municipal planners to engage with residents to better understand housing challenges within their specific contexts. This engagement is crucial for ensuring that the strategies developed are both effective and efficient.

Author contributions

RM: Writing – original draft, Writing – review & editing, Methodology, Project administration, Formal analysis, Software.

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