RESEARCH

Addressing the near absence of formal governance in service provision: governance practices thriving in informal settlements

Ivy Chumo[1*], Caroline Kabaria[1], Rosie Steege[2], Noemia Teixeira de Siqueira Filha[3], Alex Shankland[4], Helen Elsey[3,6], Penelope A. Phillips-Howard[5] and Blessing Mberu[1,7]

*Correspondence:
Ivy Chumo
ivychumo@gmail.com
[1]African Population and Health Research Center, Nairobi, Kenya
[2]Liverpool School of Tropical Medicine, Department of International Public Health, Liverpool, UK
[3]Department of Health Sciences, University of York, York, UK
[4]Institute of Development Studies, Brighton, UK
[5]Liverpool School of Tropical Medicine, Department of Clinical Sciences, Liverpool, UK
[6]Hull York Medical School, York, UK
[7]Demography and Population Studies, University of Witwatersrand, Johannesburg, South Africa

Abstract

Introduction Service delivery and representation in informal settlements often exhibit a hybrid governance system, encompassing both formal and informal mechanisms. While formal governance structures, such as municipal authorities, are typically emphasized, their absence or inadequacy does not equate to a governance void. Instead, a diverse array of non-state actors, including resident-led initiatives and local service providers, frequently step in to fill the service delivery gaps. These informal actors create a networked governance system through self-organization and collaboration, often responding to the immediate needs of residents. This research aims to uncover and document the nature and dynamics of these informal governance practices within informal settlements in Nairobi, Kenya. By acknowledging and understanding the contributions of these informal actors, we value them and move beyond viewing them as temporary aberrations or unintended consequences of state failure.

Methodology This study employed qualitative research methodology, utilizing in-depth interviews with 36 informal service providers operating in the education, healthcare, water, sanitation, and solid waste management sectors. These service providers were selected based on their history of serving vulnerable populations, including older persons, persons with disabilities, and child-headed households, and had been operational for at least eight years. Additionally, four local leaders from two urban informal settlements in Nairobi, Kenya, were interviewed. Data from the transcribed interviews were analyzed using thematic framework analysis, informed by Ostrom's framework of self-governance, which provides a conceptual lens for understanding the management of common pool resources.

Results We identified key crosscutting informal governance strategies in service delivery, including clear boundaries, alignment with local needs, effective resource management, collaborative decision-making, monitoring, appropriate sanctions, conflict resolution, and external recognition. However, challenges such as poor accountability, inadequate leadership, lack of political will, and unclear policies hindered the effectiveness of these informal governance structures. To address these challenges, results uncovered the need to focus on enhancing accountability,

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strengthening leadership, fostering consensus, clarifying policies, and promoting inclusive participation in service delivery.

Conclusion The intricate governance of basic services in informal settlements is largely driven by informal practices and structures. Strengthening these structures alongside recognizing and valuing them is key. By documenting, acknowledging and supporting these informal governance structures, we can create a more equitable and sustainable service delivery systems for residents of informal settlements in Nairobi and beyond.

1 Introduction

The concept of governance is vast and multifaceted, it is defined as a process through which state, non-state actors or individuals implement policies, within a given set of formal or informal rules, that shape and are shaped by power [1]. The emphasis is on how things are done (i.e. how decisions are made and policies implemented) rather than on what is being done [2, 3]. Governance is dynamic comprising of processes and interactions of governing over a social system–whether undertaken by the state, market, individuals, social groups and networks, or a combination of these [3, 4]. Effective governance is a key expectation of responsive service delivery [9]. In low and middle-income countries, understanding local governance practices and related challenges is often lacking, which hinders maximum service delivery, especially a rapidly growing urban informal settlements [5]. Informal settlements are suburban areas where residents often lack or have inadequate land tenure, essential services, infrastructure, and where housing does not comply with planning and building regulations [6]. The intractable challenge of informal settlements are pronounced in developing economies where local governments appear to lack financial capacity to deal with the complexities of service delivery to informal settlements due to inadequate formal urban governance [7]. Urban governance is a continuous process of negotiation and contestation over allocation of social and material resources and political power [8, 9], and has to contend with complexity of challenges in informal settlements [10]. Adequate urban governance where government (local, regional and national) and stakeholders decide how to plan, finance and manage urban resources, can, alongside other factors, curb or substantially address the challenges in informal settlements [8].

 Urban governance can be formal or informal [4, 11]. Formal urban governance is structured and rule-based, whereas informal urban governance happens outside the formal structures/rules [3, 4]. Often, formal governance channels are emphasized, yet informal governance is more relatable in informal settlements [3]. More often than not, formal governance delegitimizes marginalized people's claims to resources and services and simultaneously obscures multiple practices of informality by actors and institutions [12]. A critical consequence of delegitimization and obscurity renders residents in informal settlements even more vulnerable to poor or no services [13]. In such cases, residents are sentenced to negotiate for access to scant public services through 'middlemen' who operate clientelist networks, including 'slumlords' and local government authorities [13, 14], which often excludes the most vulnerable groups (persons with disability, older persons and child heads of households) [15].

 In urban informal settlements, an absence of formal governance does not equal a lack of governance in informal settlements [16, 17]. Non-state organizations, resident-led

initiatives or local service providers tend to step in, often responding to basic needs hence setting up a bottom-up and networked governance system for service delivery [16, 18]. Indeed, in Nairobi's informal settlements, informal governance dominate where community leaders, planning actors, communities and local service providers interact on different levels, and are driven by diverse interests while playing different roles [11, 19]. Notwithstanding, obstacles to effective basic service provision linked to poor urban governance remain. These obstacles can be categorized in three ways: supply constraints (e.g. the cost and technical complexity of providing infrastructure); demand constraints (e.g. unwillingness or inability to pay for services) [17]; and institutional constraints (e.g. governance failures), with governance failures more pronounced in informal settlements [20].

Research on informal governance in Kenyan informal settlements has underscored the rise of community-based solutions to address gaps left by formal service provision. Informal governance mechanisms, such as community-based organizations, resident associations, and informal networks, have become critical in tackling local challenges, particularly in essential sectors like water, sanitation, and security [16, 18]. These grass-roots approaches often emerge as practical responses to the inadequacies of the formal systems that struggle to meet the growing needs of urban populations in informal settlements [13, 14]. Further studies have focused on specific sectors where informal governance has shown notable success. For example, Muthee [17] explored community-based water management initiatives, which have proven effective in improving access to clean water in several informal settlements [15]. These initiatives not only address basic needs but also highlight the potential of local communities to self-organize and provide solutions tailored to their unique circumstances [17].

Gaps remain in research on informal governance in Kenyan informal settlements. While there are numerous case studies and anecdotal accounts of successful governance mechanisms, there is a lack of research that examines diversity of these mechanisms across various settlements for different service delivery. A deeper understanding of these factors is needed to understand informal governance practices [17]. Another critical area of inquiry is the long-term sustainability of informal governance mechanisms [16]. As informal settlements evolve due to population growth, economic changes, and shifting political contexts, it is essential to examine challenges facing governance structures (13,14). Research on the strategies for curbing challenges facing informal governance mechanisms could also provide valuable guidance for expanding these initiatives in other settlements [17].

In Nairobi's informal settlements, formal governance failure in service delivery is mostly witnessed in water, sanitation, waste management and healthcare among others [21]. Inadequate service provision hinders the efforts of the poor to overcome vulnerability to urban challenges, as people spend more time and resources seeking alternative provision, often of poorer quality and higher cost [15]. It also affects the development of human capital, constraining prospects of escaping poverty [17]. Understanding the nature of governance in informal settlements, where formal structures are lacking or nearly absent, is crucial for developing effective measures [15]. It is not all grim and doom following the gaps created by inadequate formal sector, as informal sector/structures come to the rescue [16, 22]. Studies conducted in similar settings described how formal rules are important, whereas informal rules such as shared expectations and

practices often overrule formal provisions [23–25]. Complementarity of formal and informal structures and mechanisms depict a great interplay, with informal structures less recognized [11]. For example, community adaptation strategies, including active dialogue, have been observed in Nairobi's informal settlements, yet they are less recognized by government authorities [26]. We argue that there is a need to document informal governance practices, its associated challenges and how these can be overcome from service delivery perspectives. By documenting the prevalence these informal arrangements, the research implicitly supports the need for formal recognition and support of these informal actors and its arrangements. This recognition is crucial as it acknowledges their vital role in filling service delivery gaps and improving the lives of residents in informal settlements. This is expected to enhance the uptake, visibility and recognition of practices, and ultimately improve services in informal settlements that mostly rely on informal governance.

2 Methodology

2.1 Study design

This article builds on a wider research program "Accountability and Responsiveness in Informal Settlements for Equity" (ARISE) Research Consortium. The ARISE Consortium aims to increase accountability for marginalized people working and living in urban informal settlements to claim their rights to health across cities in Kenya, Sierra Leone, India, and Bangladesh [12]. This is a participatory qualitative study using in-depth interviews (IDIs). Our objectives, research questions, data collection, analysis and interpretation of findings were guided by the Ostrom theory [24].

Ostrom Theory:

Elinor Ostrom's theory posits that local communities are best equipped to manage their own resources [27]. This is because they are the direct users of these resources and, as such, have a vested interest in their sustainable management [24]. Ostrom argues that regulations governing resource use should be established at the local level, rather than imposed by a centralized authority that may lack direct understanding of local conditions and needs [27, 28]. Ostrom observed that most of the "contemporary policy recommendations" are based on the assumptions that governments are capable of objectively analyzing social problems, producing desired outcomes, and managing social resources and that people are not capable of managing themselves [28]. She counters these assumptions and argues that not all social problems can be solved centrally by governments and that people are capable of organizing themselves informally to solve these problems [24, 28].

Ostrom (1990) formulated a set of design principles, that were generally present in cases of successful governance of common resources, referred to as common pool resource (CPR) [27, 28]. The principles include:

- Define clear boundaries (effective exclusion of external unentitled parties).
- Match rules governing use of common goods to local needs and conditions (congruence with local conditions).
- Ensure that those affected by the rules can participate in modifying the rules (Participation).
- Rule-making processes being respected by all the concerned (Collective choices and decision-making).

- Develop a system for monitoring members' behavior (Monitoring).
- Use graduated sanctions for rule violators (violations are punished with graduated sanctions).
- Provide accessible, low-cost means for dispute resolution (conflict resolution).
- Build responsibility (Recognition by external government authorities).

These principles may not be applicable in all contexts but they work well in informal governance contexts, where there are collective action from users or informal service providers, or both [24, 28]. Informal governance do not work in isolation, independently, but works as part of a whole system [11], in reality, it is a part of the formal system no matter how weak the linkage is [11, 29]. Informal systems do not mean illegal or underground systems, as it fills the gap of near absence of a formal system [29].

2.2 Study Setting

The study was conducted in two urban informal settlements in Nairobi, Kenya. From a population of 350,000 in the 1962 census to 4,397,073 in the 2019 census, Nairobi epitomizes the rapid urbanization in sub-Saharan Africa [30]. As the capital and largest city of Kenya, Nairobi has always been the major attraction of various segments of the Kenyan population—in search of better livelihood opportunities [31]. The consequence of the rapid urbanization is the proliferation of informal settlements, with upwards of 60% of Nairobi residents estimated to be living in informal settlement and contributing to increasing unemployment and urbanization of poverty. Our study covered the informal settlements of Korogocho and Viwandani (see Fig. 1).

We chose two informal settlements with different characteristics, to represent many other informal settlements. Korogocho informal settlements has a steady population, and multi-generational inhabitants [11, 32], while Viwandani, situated near an industrial zone, has a more transient population of young families and more educated occupants
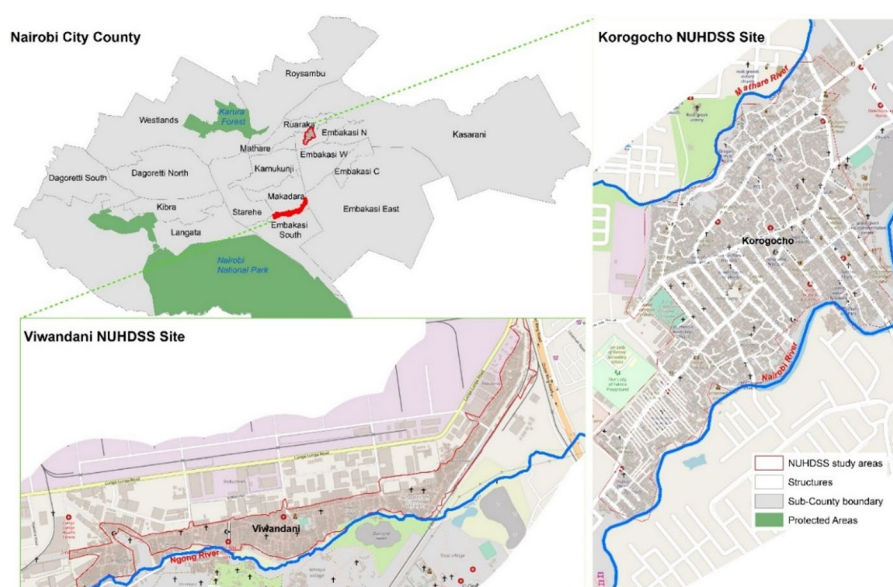
Fig. 1 Study sites.
(Source, Caroline Kabaria, 2022)

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Table 1 General characteristics of study sites

	Korogocho	Viwandani
Where in Nairobi?	11 km northeast of the Central Business District (CBD)	7 km southeast of the CBD
Size (km-squared)	1–1.5	4–5
Original land purpose	Government land	Left-over city council reserve
Founding	By rural-urban migrants in 1960	By rural-urban migrants in 1973
Structures of households	Mud & timber walls, Tin & iron sheet roofs	Tin & iron sheet walls and roofs
Population	Stable, multigenerational	Youthful, high mobility

Table 2 Summary of the study's sample coverage

Study participants	Korogocho	Viwandani
Education service providers	4	4
Healthcare service providers	2	2
Water service providers	4	4
Sanitation service providers	4	4
Solid waste management service providers	4	4
Community/local leaders	2	2
Sub-total	**20**	**20**
Total	**40**	

who labor or seek better jobs in the nearby industries outside the informal settlements [16], Table 1.

2.3 Target Population and recruitment

The population of interest were service providers in five sectors that were identified and described in a prior data collection exercise on governance diaries data collection, as priorities and unmet needs [31]. The sectors included education, healthcare, water, sanitation, and solid waste management. Out of the actors, through a stakeholder mapping exercise, we developed a stakeholder database that depicts actors/service providers who had delivered services for longer than the rest (average of eight years). These were confirmed by community co-researchers [11] and during a community advisory study consultation [33]. From the service providers identified, we purposively selected service providers representing: education ($n = 4$), healthcare ($n = 2$), water ($n = 2$), sanitation ($n = 4$), and four solid waste management ($n = 4$) in each of the study sites. We also purposively selected two local leaders from each of the study sites. In total, 20 participants were interviewed in each study site (Table 2).

2.4 Data collection process

We collected data from March to May 2022. We selected community co-researchers with support from the local community advisory committees [33], if they were endorsed by community leaders in the study sites and if they had some experience in qualitative research. Community co-researchers can bring contextual, embedded knowledge, which approaches used by outsiders may not be able to uncover [34]. Co-researchers were trained for 5 days on study aims, data collection procedures, study tools, and study ethics by the ARISE consortium project team. We conducted in-depth interviews (IDIs) using a guide which had questions on informal governance in service delivery. We conducted

face-face interviews in English or in Swahili, at a quiet location convenient to the study participants which were mainly at their workplace. Community co-researchers recorded the interviews using a digital recorder and backed up with handwritten records. These interviews lasted for approximately 1 h per participant.

2.5 Data Quality Control
Project Researchers reviewed all audio files in real time to ensure completeness and depth of the interviews, and provided feedback to the co-researchers. Researchers and community co-researchers held debriefing sessions and reflexive sessions every day to determine the key emerging themes, probing techniques, and general progress.

2.6 Data Management and analysis
Recorded audios from IDIs were transcribed in English and saved as individual Microsoft Word documents. Outputs were assigned number codes to prepare for analysis and to ensure confidentiality. We imported transcripts into NVivo 12 software (QSR International, Australia) for coding and analysis. Each transcript had a unique identifier comprising participant category, study site and sex to enhance anonymity and facilitate informed analysis.

We implemented a framework analysis [35], informed by the Ostrom's theory [36]. We familiarized ourselves with the data, then to ensure reliability, two researchers (an experienced qualitative researcher with experience in governance and an anthropologist) and the five co-researchers, developed a coding framework. We used a combination of a priori themes from Ostrom's framework and then added additional deductive themes as they emerged. The team met to discuss the themes generated and to reach agreement (Table 2). Two researchers proceeded with coding, charting, mapping and interpretation of transcripts.

2.7 Ethical considerations
AMREF Health Africa's Ethics & Scientific Review Committee (ESRC), REF: AMREF-ESRC P747/2020 approved the study. We obtained a research permit from National Commission for Science, Technology and Innovation (NACOSTI), REF: NACOSTI/P/20/7726. Approval was also sought from the Liverpool School of Tropical Medicine (LSTM) and the African Population and Health Research Centre (APHRC) internal ethical review committees as part of the larger Accountability and Responsiveness in Informal Settlements for Equity (ARISE) Research Hub funded by the UK Research and Innovation (UKRI). Before the interview, all participants were provided an informed written consent. The interviews were conducted in quiet spaces for privacy, confidentiality and for the quality of the audio files.

3 Results
Study participants included employers or long-time service providers (Table 2).

The study themes and sub-themes were anchored on the Ostrom's theory, Table 3. In addition, we reported emerging themes.

Table 3 Themes of the study

Major themes	Sub-themes
Informal governance practices	1. Boundary definition
	2. Congruence with local conditions
	3. Appropriation and provision
	4. Collective choice arrangements
	5. Monitoring
	6. Graduated sanctions
	7. Conflict resolution mechanisms
	8. Recognition by external authorities
Informal governance challenges	1. Lack of transparency and accountability
	2. Poor leadership
	3. Lack of political will
	4. Lack of consensus on areas for public/community services
	5. Unclear government policies
Community agency to overcome the challenges	1. Resolving accountability issues
	2. Support for local leadership
	3. Building political will in service delivery
	4. Consensus and consultation in service provision
	5. Clarity of policies and guidelines on service provision

3.1 Informal governance practices in informal settlements:

The informal governance practices would operate in the midst of the formal governance practices, but were more pronounced in the provision of services in the informal settlements.

(a) Boundary definition

A boundary is defined as effective exclusion of external unentitled parties [37]. Boundaries were reported to be demarcated by informal service providers in informal settlements to instill a sense of collective responsibility. Structure owners would initiate locking water points and toilet facilities for use by specific individuals who had fully paid for the services requirement in their structures, without interference by government officials like public health officers. As such, without the external actors, water, health, solid waste management (SWM), and sanitation service providers would set boundaries on services to clients until they could pay as agreed. The boundaries were beneficial as it acted as a governance mechanism for enhancing responsiveness, accountability, and efficiency.

> *"It is good to have boundaries well defined because it enables us as service providers to benefit. You know, boundaries set by people who are external parties may disadvantage us as providers and may ultimately reduce the quality of service." [Water service provider].*

(b) Congruence with local conditions

Congruence with local conditions means that service delivery efforts are responsive to the realities and priorities of people living in informal settlements, leading to more impactful and inclusive outcomes [38]. Study participants described varied structures and patterns of operations, and congruence were mainly in the form of negotiations on cost of pay, time to offer services and how to offer services. For example, solid waste workers and the community could agree on non-conventional payment for SWM services i.e., paying on weekly instead of common approach of daily pay, and non-conventional time (outside the common working hours) for collection, as some residents leave their homes very early and arrive late in the evening, among others. Education service

providers could also agree with parents of school going children on non-conventional approaches to offer the services, including flexible payment schedules, as well as when to drop the kids and pick them up after school. The agreements and structures were not written agreements, but there was compliance. By ensuring congruence with local conditions and adopting a holistic, participatory, and adaptive approach, service delivery interventions contributed to inclusive urban development.

> *"We have local negotiations and agreements on how things should happen here. For example on how it should happen between teachers and parents in service delivery" [Education service provider].*

(c) Appropriation and provision

Appropriation in service delivery involves a sense of ownership, empowerment, and agency, where people feel that the services provided are relevant, accessible, and responsive to their requirements [39]. Our study illustrated this through a variety of actions including participating in decision-making processes, adapting service delivery to local contexts, and integrating services into daily routines or practices. For example, at the settlement level, water (and other utilities) vendors with the same interests were organized into mutually supporting groups, and members cooperated to solve business-related problems (such as financial crises, water crises) at a local level, conflict mitigation and communication with external actors such as political leaders and government officials. Irrespective of political affiliation, there was a mutual understanding between utility vendors that service provision could only happen after the agreement/approval of the existing vendors. This reduced conflict between vendors and diminished unhealthy competition between them– both of which could contribute to improving inhabitants' access to utilities.

> *"Water vendors are able to join groups and be supported by government and political leaders in many ways including in business and communication among others" [Water service provider].*

(d) Collective choices and decision-making

Collective choices and decision making in service provision means decisions are made through collective-choice arrangements that allow most resource appropriators to participate [24, 27]. Our participants illustrated that public participation were sometimes held among service providers, service users, community leaders, and people of influence in the community. During such meetings, service delivery issues affecting users were raised and discussed. Such meetings often led to collective decisions, formulation of rules, amendment of already set rules and management of services. In many instances, community leaders ensured that as many providers and users as possible participated in decisions and that they carried out their duties as agreed upon in the meeting.

> *"Often times we hold meeting with community, leaders and anyone of influence to agree on issues or to provide new information that need discussion and debates" [Water service provider].*
> *"When there are meetings, as a leader, I do all I could to ensure many people affected by a service get to attend…even if it means developing posters, I usually do that" [Community Leader].*

(e) Monitoring

Monitoring means that rules are enforced through effective monitoring by monitors who are part of or accountable to the appropriators [27]. Study participants described how monitoring was done in various ways. For example, when residents pass by a health facility that should be opened, and it was closed, they could contact the management. In water and sanitation services, service users could monitor individuals who were vandalizing service infrastructures and report to authorities. Services that had security personnel guarding, and where many people were involved in decision making and in settings rules and negotiations needed less additional monitoring.

"We are all responsible, for example, if one is passing around a health facility that should be open but is still closed in the morning, or near a water point and notice somebody vandalizing, they usually report to the police station, to the area chief" [Health service provider].

(f) Sanctions

This means that violations are punished with graduated sanctions [24, 27]. Study participants described that sanctions were in the form of being forced to vacate a community, school or a structure; being denied accessing the service or being asked to repay for a facility where it was vandalized. For example, teachers with parents who did not comply with the guidelines of a particular school were not allowed to have the children in the school. On the other hand, children who would be undisciplined and given caveats for more than five times were expelled from a school.

"For those children who are rude and not compliant with school rules, we talk to them on the best way to behave. If they repeat for over 5 times, we expel them from the school because they can influence others with their bad behavior" [Education service provider].

(g) Conflict resolution

Conflicts resolution states the need to resolve issues with low-cost and easy-to-access conflict resolution mechanisms [27]. Study participants reported cases of conflict recounted in the form of physical fights, disagreements, exchange of words, or quarrels among service users, and between users and service providers, mostly due to scare resources. Conflicts could lead to damage of property, physical injuries and emotional challenges. As such the study participants reported attempts at conflict resolution. Conflicts were resolved in various ways, including negotiations, discussions or involving a third party with influence or power. It was also noted that without boundaries, guidelines or rules on service use and provision, there were many conflicts experienced. One landlord explained that when tenants stubbornly refuses to abide by the toilet rules such as not cleaning the toilet, they were reported to the local chiefs/local leaders. The most common conflict resolution strategy reported by many service providers were negotiations and discussions.

If you count the number of conflicts here {at the water kiosk}, you will not want to work here… Conflicts include physical fights, disagreements, exchange of words, or quarrels among service users and between users and service providers. For example, somebody will just provoke a conflict, they will refuse to pay for a service, when they have fetched the water" (Water service provider).

Table 4 Themes and sub-themes of governance challenges

Themes	Sub-Themes
Lack of transparency and accountability	Risks of corruption Access to useful information
Poor leadership	Lack of skills in local government Lack of capacity to enforce laws and regulations Uncertainty of funding
Lack of consensus on areas for public/community services	Limited access of citizens to policymaking Lack of interest of citizens on local issues Underrepresentation of vulnerable groups
Lack/inadequate political will	Politicization of local issues Lack of trust in local government Lack of political stability
Unclear policies	Interdependence of policy issues Inflexible bureaucracies/rigid rules Lack of municipal autonomy Overlapping responsibilities Lack of respect for laws and regulations Limited scope of responsibilities

"Most conflicts were resolved through negotiations, discussions or involving a third party with influence... in many ways, the cheapest one that we prefer is agreement or negotiations" [Solid waste management service provider].

(h) Recognition by external authorities

Recognition mechanism describes that higher-level authorities recognize the right of the resource appropriators to self-govern [24, 27]. In informal settlements, government policies and use of state assets was reported to benefit elites and their networks at the expense of the community. Therefore, in many instances, study participants described how the community relied on support by external authorities including non-governmental organizations (NGOs), in education and health services among other services. This meant that they had to cooperate with external actors.

"Due to scare resources in the public education facility, we have got some NGOs supporting some things in the school. They {NGOs} also support some nearby health facilities" [Education service provider].

3.2 Informal governance challenges

This section presents and discusses the governance challenges that emerged from the empirical findings in relation to service delivery in informal settlements. These include challenges associated with poor or lack of transparency, accountability, leadership, over-ambitious private sector, lack of consensus on ownership of service provision and political will (Table 4).

(a) Transparency and accountability shortcomings/lack of transparency and accountability

Lack or inadequate transparency and accountability have become precarious issues in service delivery in informal settlements. Transparency include widespread access to service delivery-related information [40] while accountability entails actors being accountable for their actions [41]. Our findings revealed that service delivery was characterized by delays, conflicts and corruption associated with a lack of transparency and inadequate accountability. During the discussions, it was revealed that many government service

providers were not open because they did not provide timely and adequate information about the stages and challenges faced by the communities and their leaders.

"It is not easy to provide information on the challenges in access to services. However, as you move around, you will see long queues in health facilities, water points and sometimes at the sanitation point. On meetings that we conduct here, you hear issues raised related to misuse of resources and a lack of transparency all through" (Water service provider).

Participants described how forums with community leaders and the community revealed limited or inadequate knowledge on service delivery. For example, service providers described how during forums, community leaders lamented that they need to be informed of the steps and stages in service delivery, and noted further that inadequate transparency and accountability are blamed on community leaders by community members instigating that they are the ones who delay the service delivery processes.

"During several forums that we had with the community, and community leaders, the community leaders blamed us {service providers} for putting them in the dark vis-a-vis service delivery operations. From the leaders' perspectives, the blames were meant to be for service providers and not to them as leaders" (Health service provider).

(b) Inadequate leadership

During the conversation with community leaders, it was noted that guidance and leadership from either local government authorities or the central government were inadequate because of the big scope of coverage allocated to government officials. Some community leaders lamented that some political leaders had a low capacity to deal with service delivery-related governance issues. This is because some were politically elected regardless of their understanding of service delivery and professional competence.

"There is a need for effective leadership; leadership that cares for the common person. In many cases political leaders who should be supporting service delivery are affiliated to political parties and may not have expertise needed...this reduces governance effectiveness" (Community leader).

Service delivery-related policies and laws were sometimes not recognized by community leaders, who are key actors at lower levels. It was further noted that despite the lack of a legal mandate, community leaders played a significant role in service delivery-related matters. During deliberations, it was noted that some members of the service delivery committees were not selected by merit or professional capability but rather for being either famous or influential within the community, as one community leader said:

"Many leaders and local committees were formed without clear guidance... some political leaders do not have expertise and it becomes challenging for them to offer guidance. So things are not running smoothly, as most committee members and leaders are not properly selected." (Community leader).

(c) Lack of consensus on areas for public/community services

Study participants stated that community, state and service providers' consensus over service delivery was antagonistic. In some circumstances, community members needed

to relocate to offer space for public service provision without instant compensation, notwithstanding that some parts of informal settlements are already congested. As such, there were insistent controversies and a lack of consensus among community members regarding the provision of spaces for public use. This is worsened by the fact that, particularly in informal settlements, plot sizes are usually small. In such scenarios, it was difficult to advise the holders to provide some part of their land/plot for public service. Community leaders noted that this was a challenge because planning for service delivery cannot be accepted by leaving out other members.

> *"We have been requesting one land owner to volunteer some part of his land for a solid waste collection point, but we have not reached a consensus. Developments get to stall when such circumstances are encountered. This is a critical challenge for the community and service providers facilitating the process" (Community leader).*

Additionally, participants revealed that some plot holders do not stay in the areas and may not participate in the collective community consensus over space for public service provision. It can be seen from the revelations that providing an area for public service is sometimes not possible. This can still be more problematic when the areas lack or have inadequate basic services.

> *"Land owners who are not resident in informal settlements do not see a need for development and cannot reach an agreement for offering some space for public service" (Community leader).*

The lack of consensus was thought provoking as described by study participants below.

> *"The absence of consensus should not paralyze decision-making; it should stimulate leaders to foster an environment where differing opinions are valued and conflicts are resolved through dialogue." (Community leader).*
> *"Lack of consensus invites us to question, and to seek alternative pathways. It challenges us to listen more carefully and to respect dissenting voices…A lack of consensus is a sign that diverse opinions and ideas are at play and needs dialogue. It's a reminder that progress in service delivery often emerges from the clash of different viewpoints." (Education service provider).*

(d) Lack of a political will in service delivery

Politics was regarded as a driver of service delivery in informal settlements in Kenya. Community leaders noted that politics impact the service delivery activities from the grassroots to the top levels. Politicians may tend to put their interests first despite the existence of rules and regulations. Community leaders revealed that sometimes politicians might influence people's ability to volunteer their land for public services. Politicians also tend to protect land owners who hold land within hazardous areas and/or protected areas, even though laws and policies prohibit development in such areas. This situation denies normal professional practices. On the other hand, it was noted that sometimes politicians play a positive role in service delivery, especially members of parliament, who strive to protect public interests.

> *"Politicians tend to put their interest first, instead of interest of community first" (Community leader).*

"While political influence can be complex, we have seen dedicated political leaders who champion public interests and prioritize service delivery. Their commitment plays a crucial role in ensuring these communities have access to essential services" (Community leader).

(e) Unclear policies

Unclear policies can create resistance to improvements in service delivery methods. Ambiguous policies may create loopholes, making it difficult to hold responsible parties accountable for service delivery failures. Lack of clarity can lead to finger-pointing and a lack of responsibility. People might resist new approaches if they are not properly explained and communicated. Further, ambiguity in policies might create legal and ethical problems. Service providers might unintentionally violate laws or ethical standards due to the lack of clear guidelines.

"When policies are not clear, it makes it difficult for service delivery to be effective… I can give an example of a private health facility near the river, nobody knows what time it should be opened or closed. So sometimes you go there while unwell and you find it closed" (Community leader).

Service providers also described the interdependence of policy issues, inflexible bureaucracies/rigid rules, inadequate local government autonomy, overlapping responsibilities, working across different tiers of government, low compliance on laws and regulations and limited scope of responsibilities for state actors.

"Those offering sanitation services in public toilets and do not have guidelines on how much it cost to use the facility, leads to many challenges including not using a facility when needed or being forced to get into debts for using the facility. When policies are ambiguous, essential service delivery becomes a muddle of uncertainty, leaving citizens and service providers in a state of frustration." (Sanitation service provider).

"The lack of clarity in service delivery policies also erodes public trust, as citizens are left wondering about their rights and entitlements." (Water service provider).

3.3 Strategies for enhancing self-governance practices and overcome governance challenges

(a) Resolving accountability issues

Addressing accountability issues in service delivery in informal settlements requires sustained efforts and collaboration between governments, communities, and other stakeholders [11]. Our data underscores a focus on the unique challenges faced by informal settlements and tailor solutions to meet their specific needs. Study participants described the need to establish mutual accountability mechanisms within local governments, service provides and the users. Accordingly, this could include regular audits, performance evaluations, and consequences for corruption or mismanagement. The participants also revealed the need to promote accountable and responsible local leadership. Addressing accountability issues was mentioned as an integral part of creating a just and trustworthy society. It is a testament to the collective commitment to fairness, transparency, and the welfare of all members of our community hence improved service delivery.

"By actively resolving accountability issues, we build the trust and confidence of users in service delivery. Accountability ensures that citizens believe in the fairness of the system and actively participate in shaping a better future for all." (Health service provider).

(b) Empowering local leadership

The participants also acknowledged the need to support local leadership. For example, through election of officials committed to improving the lives of residents in informal settlements. Information campaigns were also described to enhance local leadership, as it could inform residents about their entitlements, available services, and how to report issues or grievances.

"Supporting local leadership is not a choice. It is a commitment to the fundamental principle that every community, regardless of its size or circumstance, deserves capable leaders with interest of people at heart." (Community leader).

Further revelations indicated that where government owned basic services were not available, community leaders sought alternatives to address the challenges. For example, community leaders used various initiatives in acquiring space for public service. They noted that they convinced big plot holders to contribute some piece of land for constructing a private school or a public toilet, among other facilities. Although some holders of big land accepted to invest in the provision of public services, community leaders noted that acceptance was essentially difficult for a majority because of capital shortage. As such, participation of private firms lacked community spaces for public benefit.

"Local leaders are the bridge between policy and practice, between vision and reality. By supporting them, we build bridges to progress service delivery for generations." (Education service provider).

(c) Advocating for equitable service provision in informal settlements

Political will is a commitment of actors to undertake actions to achieve a set of objectives, entailing intent. Study participants advocated for the establishment of clear guidelines that govern the operational hours of essential facilities such as health centers, water points, and solid waste collection from households. The participants described how the guidelines, coupled with transparent pricing structures for various services, would ensure that residents of these often-marginalized communities benefit fully from the infrastructure and services available to them. The establishment of guidelines, rather than rigid legal or constitutional frameworks, offers a more flexible and adaptable approach. Participants described how the guidelines could be tailored to the specific needs and circumstances of each informal settlement, ensuring that they are relevant and effective. By prioritizing the well-being of community members and promoting equitable access to essential services, leaders can help to bridge the gap between formal and informal settlements, creating a more just and prosperous society for all.

"We need to advocate for guidelines related to operational hours of essential facilities like health facilities, water points and schools, cost of different services, among other guidelines. This will enhance that community members benefit from service provision and infrastructure in informal settlements" (Community leader).

"Building political will requires leaders to listen intently, act decisively, and uphold the dignity of every citizen by delivering services that enhance their quality of life." (Health service provider).

(d) Clarity of policies and guidelines on service provision

To address these challenges, it's crucial for policymakers and service providers to ensure that policies are clear, transparent, and easily understandable by all stakeholders. Regular communication, community engagement, and periodic policy reviews are essential to maintaining effective and efficient service delivery systems. Clear policies not only enhance the quality of services but also foster trust and cooperation between the service providers and the communities they serve.

"In the realm of service delivery, clear policies act as a promise fulfilled. They provide citizens with a clear understanding of their rights, entitlements, and the quality of services they can expect, fostering trust in the government and public institutions." (Community leader).

"Clarity in policies empowers service providers to deliver with confidence and precision. When guidelines are explicit, it eliminates guesswork, allowing professionals to focus on efficient execution, ultimately benefiting the recipients of these services" (Solid waste management service provider).

(e) Community engagement, consensus and consultation in service provision

There were needs for town hall meetings where community members, local leaders, and service providers. Study participants described community engagement as a cornerstone of effective service delivery. By involving residents in decision-making processes, service providers could tap into the collective wisdom of the community, leading to more tailored and relevant solutions. This approach not only validated the voices of community members but also ensured that services would meet their specific needs and priorities. Consensus and consultation played a crucial role in this process. When communities were actively involved in shaping the services that affect their lives, they were more likely to support and utilize those services. Participants described how this lead to improved outcomes, increased community satisfaction, and a stronger sense of ownership over local development initiatives.

"Consensus and consultation enhance service delivery. Engaging the community in decision-making processes not only validates their voices but also leads to more effective, tailor-made solutions." (Community leader).

"A community's needs are best understood by the community itself. Through consensus and consultation, service providers can tap into the collective wisdom, enabling them to design services that are not just wanted, but truly needed." (Water service provider).

4 Discussion

This study explored informal governance practices in Nairobi's informal settlements, revealing their challenges and the strategies employed to overcome them. The findings highlighted the crucial role of these practices in maximizing service provision for the urban population, particularly in light of formal governance inadequacies. Aligning with Ostrom's principles of self-governance, these practices demonstrate how communities

manage scarce resources [26]. Management practices related to common pool resources are central to access and utilization of inadequate services, providing a deeper understanding of informal governance. These practices, while informal, often exhibit a "second sense" of formality, characterized by established patterns of behavior, enforcement mechanisms, and decision-making processes, thus creating internal order and structure [23, 27].

Observed governance practices aligned strongly with Ostrom's principles of self-governance. This was evident in how communities established "clearly defined boundaries" and other practices to delineate responsibilities among service providers, preventing ambiguity and enhancing accountability. For instance, structure owners initiated the locking of water points and toilet facilities for specific users who had paid for the services, without interference from government officials. This community-led approach to managing access and ensuring accountability exemplifies self-governance. The finding echoes studies in Kisumu, Kenya, and semi-arid Tanzania, which highlighted the importance of boundary management in service provision [23, 41]. Despite their importance, informal governance practices in Nairobi's informal settlements faced challenges. These included political interference, which negatively affected service delivery. The study revealed instances where politicians prioritized their own interests over regulations, disrupting service management. This aligned with findings from studies in Tanzania, Trinidad, and Tobago, which illustrated how control over service delivery is often tied to political power in developing countries [5, 42]. Such political influence undermined effective service provision and equitable resource distribution.

This study highlighted the strength and resilience of community-led initiatives. In the absence or inadequacy of formal government support, informal governance structures emerged, enabling communities to self-organize and manage resources effectively. The self-organization often involved adapting service delivery to local conditions and fostering community participation in decision-making. For example, solid waste workers and residents in the study agreed on non-conventional payment schedules, demonstrating a localized approach to governance that ensures service delivery was adapted to the specific needs and circumstances of the community. This findings are consistent with Huchzermeyer's [43] emphasis on the necessity of aligning service delivery interventions with local conditions to enhance efficiency.

Findings of this study, along with evidence from similar settings in Kenya and other African countries [17, 42, 44, 45], underscore the importance of informal governance in service delivery. As recognized by Kenya's constitution, sovereignty is vested in the people [46], this study demonstrates how residents in informal settlements exercise their right to self-governance. The study's findings from Korogocho and Viwandani extend existing research by providing deeper insights into the informal governance mechanisms at play and how they improve diverse service delivery and resource management. By recognizing community agency and supporting informal governance structures, it is possible to foster more effective and equitable service delivery in informal settlements. This aligns with Suhartini's [3] assertion that community participation is crucial for improving governance and service delivery in urban areas.

5 Strengths and Limitations

Ostrom's groundbreaking research on informal governance practices is highly relevant in informal settlements where formal governance structures are scarce. While Ostrom's governance principles may not directly apply to service providers, her institutional analysis approach and focus on CPR offer valuable insights for governing larger commons, including service providers. The study was limited to only four types of service provision, however, it lays the basis for other service provision mechanisms in informal settlements.

6 Conclusion and recommendations

We acknowledge that informal governance is not fully autonomous but operates within a broader institutional landscape. This study does not look into the complementarity of formal and informal governance, but underscores the critical role of informal governance in addressing the pressing needs of marginalized communities. Despite facing challenges such as inadequate transparency, poor accountability, and policy uncertainties, informal governance mechanisms have demonstrated effectiveness in service delivery, conflict resolution, and community empowerment. To strengthen and support these systems, a multifaceted approach is required. This includes policy reforms recognizing and empowering informal governance, fostering collaboration between government agencies and community organizations, facilitate accountability, providing adequate funding and technical assistance, capacity building for community members, and promoting community ownership and participation. Additionally, robust monitoring and evaluation systems are essential to track progress and inform future interventions. By implementing these approaches, we can harness the potential of informal governance to create more equitable, sustainable, and resilient informal settlements. Future research should conduct a quantitative research on informal practices to identify optimal governance pathways that maximize service delivery and address the long-term inequities faced by marginalized urban communities.

Supplementary Information

The online version contains supplementary material available at https://doi.org/10.1186/s12982-025-00805-1.

> Supplementary material 1.

Data availability
Data for this manuscript cannot be shared now, as they are still being used to develop other manuscripts. However, if you need to access the data in the next 6 months, please write to ichumo@aphrc.org. Thereafter the data can be available to the public at https://aphrc.org/microdata-portal/.

Declarations

Ethics approval and consent to participate
Institutional Review Board Statement: The study was conducted in accordance with the Declaration of Helsinki, and approved by the AMREF Africa Ethics and Scientific Review Committee (ESRC/P747/2019; Date: 8 February 2020) and the National Council for Science, Technology, and Innovation (NACOSTI/P/20/7726; Date: 20 November 2020).

Informed consent
Informed consent was obtained from all subjects involved in the study

Consent for publication
Not applicable

Competing interests
The authors declare no competing interests.

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