Community Engagement in Solid Waste Management: An In-Depth Analysis of Household Participation and Practices in Chelstone Township in Lusaka, Zambia

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ABSTRACT

The study investigated the efficacy of community engagement in solid waste management in Chelstone Township, with a focus on household involvement and participation. Understanding the extent of community participation in solid waste management is critical for improving waste management systems and developing sustainable practices in local communities. Chelstone Township, Lusaka Province, Zambia, presented an attractive backdrop for investigating community engagement in solid waste management due to its unique blend of social, economic, cultural, and political elements. Chelstone's population is diversified, with a mix of indigenous residents and migrants from other regions of Zambia, living in both informal settlements and more affluent residential neighborhoods. To examine the level of community engagement in solid waste management in Chelstone Township, the researchers used a mixed-method approach that included both qualitative and quantitative methodologies. The study found that community involvement in solid waste management was only partially effective, owing to a lack of household participation in decision-making procedures. According to the findings, community engagement in solid waste management was predominantly routed through councilors, resulting in insufficient representation of households in planning and decision-making. Community-based enterprises (CBEs) also demonstrated a lack of household engagement. The study identified obstacles such as waste politicization, a lack of information, distance collection places, unreliable collection services, and issues with openness and accountability in cash allocation. The outcomes of the study highlight the importance of increased education efforts to encourage community participation in garbage management. To supplement local government initiatives, effective engagement of stakeholders such as community organizations, NGOs, and commercial sector entities is advised. The study recommends incorporating community people in solid waste management planning, decision-making, and implementation.

Keywords: Community involvement, solid waste management, household participation, and sustainability.

INTRODUCTION

Solid waste management plays a pivotal role in urban development and environmental sustainability, especially amidst the rapid urbanization and population growth witnessed in many developing nations (Bournay, 2006). African countries have traditionally relied on centralized waste management practices, utilizing imported garbage trucks to transport waste to authorized landfill sites due to their convenience and cost-effectiveness (Liyala, 2011). This study delves into the critical area of community engagement in solid waste management, concentrating on households in Chelstone Township, Lusaka Province. Crucial components within this research domain encompass solid waste management, community participation, waste generation, waste collection infrastructure, recycling methods, and the multifaceted environmental and social repercussions of improper waste disposal. The intricate interplay among these factors underscores the complexity of waste management, with community engagement directly influencing waste creation patterns, efficiency of collection systems, and overall environmental well-being in a particular area.

Researchers such as Ahmad et al. (2010) have emphasized the pivotal role of community participation in waste management decisions, highlighting its potential for fostering more effective and sustainable waste management techniques. Studies conducted by Wilson and Rodic (2012) have demonstrated that heightened community involvement in recycling activities leads to reduced waste output and enhanced diversion from landfills. Aliyu et al. (2018) have shed light on the necessity of collaborative community engagement, particularly in developing-country metropolitan settings, to address waste management challenges.

However, existing evaluation methods, including surveys, interviews, and observational studies, while informative, often suffer from respondent bias and limitations in sample size, making comprehensive analysis challenging. Consequently, a more profound investigation focusing on specific urban contexts, such as Chelstone Township, is imperative. Chelstone's unique amalgamation of social, economic, cultural, and political variables creates an ideal backdrop for examining community involvement in waste management, adding layers of complexity to the study.

Chelstone Township, situated in the Munali Constituency under Chakunkula Ward in Lusaka Province, Zambia, boasts a diverse population of 32,382 (CSO, 2012). This demographic diversity, encompassing indigenous Zambians and migrants from various parts of the country, significantly influences community dynamics, particularly in terms of solid waste disposal methods. Residents' perceptions and participation in waste management operations are intricately linked with social interactions, conventions, and networks. Zambia, despite its low levels of urbanization, is witnessing rapid population growth, intensifying challenges in solid waste management, particularly in major cities like Lusaka.

Chelstone Township presents a mix of informal settlements and affluent residential areas, contributing to significant economic disparities. This economic diversity impacts waste generation trends, disposal behaviors, and the availability of resources for waste management infrastructure (Chisanga, 2016). Socioeconomic factors, including economic disparities, shape the willingness and ability of households to engage in waste management initiatives. Additionally, Chelstone's culturally diverse population, with varying norms related to cleanliness, environmental responsibility, and community living, significantly influences waste management practices and acceptance of new waste management strategies. Understanding these cultural dimensions is pivotal for effective community engagement.

Moreover, the political landscape in Chelstone and Zambia as a whole plays a pivotal role in shaping waste management policies, enforcement, and governance. Political decisions influence legislative frameworks,

local government agendas, and financial allocations for waste management initiatives, thereby either hindering or fostering community participation in waste management programs (Chisanga and Lührmann, 2016). Thus, the distinctive combination of social, economic, cultural, and political elements in Chelstone Township, Lusaka Province, Zambia, provides an enriching environment for studying community engagement in solid waste management. This study aims to investigate how these multifaceted factors influence household behaviors and participation in waste management activities, contributing to a comprehensive understanding of the intricate dynamics at play.

Problem Statement

Local communities globally have often been marginalized, relegated to passive roles as recipients of government services and excluded from crucial decision-making processes impacting their lives (Tadesse, 2006). Consequently, these communities frequently lacked awareness of their potential contributions to decision-making, particularly in critical areas like solid waste management. Despite numerous plans addressing solid waste management and disposal, the essential element of community participation was often absent, impeding progress towards improved and efficient waste management within these communities. This absence posed a significant challenge, especially in Lusaka, the capital city of Zambia, where escalating solid waste production demanded exploration of sustainable waste management techniques. The prevailing top-down approach to solid waste management led by the Lusaka City Council faced difficulties, highlighting the necessity for innovative solutions. Integrating a bottom-up approach involving households with the conventional management model emerged as a promising solution (Chisanga et al., 2023). ounting volume of solid waste in Lusaka emphasized the urgency of the situation. At the time, less than 40% of the city's monthly garbage was appropriately managed, with the majority being burned, buried, or illegally discarded, contributing to environmental degradation and health hazards (Shalala-Mwale, 2012). Inadequate waste management resulted in outbreaks of communicable diseases like cholera, soil, and water contamination, exacerbating overall environmental deterioration (Chaampa, 2014). These dire circumstances demanded immediate attention and innovative interventions to safeguard community well-being and environmental health.

Despite efforts to involve communities in waste management through participatory approaches such as the decentralization policy, which emphasized community engagement (GRZ, 2013), the effectiveness of these initiatives remained weak. The Lusaka City Council (LCC) established structures favoring public-private partnerships over top-down planning (LCC, 2008). However, household resistance impeded effective waste management, leading to substantial accumulations of uncollected rubbish and compromising the city's cleanliness (Meulenbeek, 2011). Despite participatory efforts, the effectiveness of community engagement in solid waste management remained limited, evident from persistently high levels of uncollected waste and resulting health and environmental hazards (Meulenbeek, 2011). Previous initiatives failed to adequately address household resistance and challenges, while also underutilizing the potential of bottom-up participation to complement the top-down strategy.

This study aimed to bridge this research gap by comprehensively evaluating the prevailing practices of local governments in incorporating communities into solid waste management in Lusaka. It investigated the reasons for household resistance, barriers to effective participation, and the potential benefits of adopting a bottom-up approach. Moreover, it aimed to develop practical recommendations at policy, planning, and implementation levels by scrutinizing the intricate relationships between community engagement and solid waste management outcomes. In doing so, the study aspired to unlock the latent potential of community participation, mitigate waste-related challenges, and enhance the overall cleanliness, health, and sustainability of Lusaka. This study was guided by the following research questions: what is the level of community involvement in solid waste management planning in Chelstone Township?; what is the level of

community involvement in solid waste management decision making processes in Chelstone Township?; what is the extent to which the Lusaka City Council engage the community in solid waste management issues in Chelstone Township? and what are the community views regarding the effectiveness of the current solid waste management system implemented by Lusaka City Council?

LITERATURE REVIEW

Community Participation in Solid Waste Management

In a comprehensive analysis of 73 global studies, Yanhong et al. (2020) elucidated the multifaceted benefits of community participation in solid waste management. These benefits encompassed enhanced waste collection and disposal services, reduced environmental pollution, and heightened public awareness regarding the significance of solid waste management. Crucially, the success of community participation hinged on its voluntary, inclusive, and transparent nature. Other studies such as those conducted by Peter Mwita et al. (2022) in Africa highlighted the indispensability of community engagement for effective solid waste management. They identified improved waste services, reduced pollution, and increased public awareness as direct outcomes. However, challenges such as lack of awareness, resources, and trust in government posed significant hurdles.

Further exploration by Alemayehu Tsegaye, Getinet Haile, and Teshale Wolde (2020) in Addis Ababa, Ethiopia, discerned socioeconomic status, education levels, and access to information as pivotal factors influencing community engagement. Areas with higher social cohesion exhibited increased participation. A study in Lusaka, Zambia, conducted by Emmanuel Mwanza, Gideon Mutale, and Chiluba Mwila (2021), revealed low levels of community participation and highlighted challenges akin to other regions: lack of awareness, resources, and trust in government.

Critically analyzing these studies, a consensus emerges regarding the positive impacts of community participation on waste management, bolstering the credibility of these findings. While these studies provide localized perspectives and delve into specific factors and challenges, they fall short in exploring a broader range of cultural and geographical contexts. Additionally, they emphasize the importance of community participation but lack detailed guidance on translating these findings into concrete policies or interventions, suggesting a need for more robust policy recommendations (Chisanga et al., 2024)

In examining community roles in solid waste management, a historical perspective underscores the passive role assigned to communities, limiting their awareness of their potential contributions. This situation necessitates a shift from autocratic waste management practices to inclusive, community-driven approaches. Studies in India and Nigeria emphasize the pivotal role of public participation in waste sorting, highlighting the need for informed waste collection systems and proactive environmental education initiatives. Economic factors also influence public participation, with higher-income and educated individuals showing more willingness to engage, particularly in recycling efforts.

Importantly, the socio-demographic landscape shapes public attitudes and behaviors toward waste management services. Studies utilizing the Contingent Valuation Method (CVM) revealed households' willingness to pay for improved services, with age, race, and income being significant factors. However, other contexts, such as Techiman-North District in Ghana, exhibited reluctance due to inadequate waste collection infrastructure, emphasizing the importance of local government monitoring and sustainable environmental education initiatives.

Examining global scenarios, community-based approaches have demonstrated transformative potential.

Initiatives in India and the Caribbean underscore the role of private sector participation in waste management. Collaborative programs, like the Zabbaleen Environment and Development Program in Cairo, showcase the impact of community partnerships, leading to economic sustainability and improvedmunicipal waste services.

Nevertheless, challenges persist globally, with uncollected waste leading to environmental hazards and disease outbreaks. Cultural contexts influence community involvement, emphasizing the need for active engagement rather than passive reception. Effective community participation necessitates collaboration between local governments, Community-Based Organizations (CBOs), micro-enterprises, and local leaders. These studies collectively emphasize the pivotal role of public involvement in solid waste management, shedding light on the intricate interplay of socio-demographic, economic, and cultural factors influencing community participation.

Community involvement in SWM in other Countries

There are different studies conducted concerning the community involvement in the management of solid waste, because this study is aimed at examining the effectiveness of the community approach in solid waste management, it is crucial to understand how the community approach has been helpful in the management of solid waste in various countries. According to the study about the Improvement of Municipal Solid Waste Management in India (Chriss et. al, 2008), overall changes were noted in different areas. For example in Kannur, The center for environmental education (CEE) was working on a project focused on solid waste management in eight schools. The students were made aware of the prevailing waste scenario. In addition, Eco clubs were formed and the students conducted surveys of the waste generated in their schools, houses, and towns. They also observed the ways in which people contributed to waste generated by using products unwisely. On the basis of this information and their work with CEE, they formulated action plans to minimize waste. The students also engaged in green games, activities with strong environmental messages, community walks, clean up drives, street plays and natural wax.

Clairvair (2006), in his study about public participation in solid waste management in small island in developing states indicated that in the Carribean, the private sector participation in SWM has been significant. In the Barbados, the private sector participation has been mainly in waste collection and transportation on to the disposal site as well as recycling. Apart for indoor and outdoor storage, some of communities facilitate the collection process by placing waste out at curbside for collection. Sorting at source is limited to returnable containers at household level and cardboard, plastics and glass by the commercial waste generators (supermarkets and business houses). Primary plastics bottles are recycled as manufactured roofing materials. This has helped to improve management of special and hazardous waste and diminished littering and illegal dumping (Chisanga et al., 2023).

In Cairo, a partnership formed by local, national, and international actors has successfully transformed a community through the Zabbaleen Environment and Development Program. Since the program began in 1985, quality of life has improved in a formerly neglected community, thousands of jobs have been created as an improved municipal waste collection and recycling system have been implemented. At the intersection of poverty and the environment, the Zabbaleen Environment and development program fashioned productive solutions example is production of paper and rugs from waste paper and clothing (ADB, 2002).

Also, there were negative impacts recorded in different countries due to improper solid waste management. Uncollected solid waste may cause drainages to block and lead to flooding which may possibly contribute to the spread of water borne diseases. An example of this occurrence would be that of Surat India, wherein there was an outbreak of a disease which ultimately affected over 1000 people (UN-HABITAT, 2010). In

addition, annual floods in East and West African and Indian cities are blamed at least in part on plastic bags blocking drains. UN-habitat data, show solid waste collection average for cities in low and middle income countries ranging from as low as10 percent in peri-urban areas with a highest rating of 90 percent in city centers. This means that many households in many cities receive no services at all, with the result that too much waste ends up in the environment. Even in Europe and North America uncollected solid waste can still hit the headlines as in the year 2008, example of Naples, Italy where mountains of solid waste lined the streets for months, collectors stopped picking up the wastes because all the region's landfills were full and residents protested fiercely. The UNHABITAT health data also show that rates of diarrhea and acute respiratory infections are significantly higher for children living in households where SW is dumped or burned in the yard, compared to households in the same cities that receive a regular waste collection service.

According to Simon, (2008; *cited in Riedijk, 2010*) the amount of these unregistered informal waste collectors has increased in Dar Es Salaam since the recent introduction of the market for recycling of plastic water bottles from Chinese companies. Interestingly, the role of CBOs in waste collection and processing is given a high level of importance in Tanzania and this is so because a notable amount of waste is managed by the CBOs and with the formal players in the market only operating at a larger scale (Chisanga, et al., 2024)

Actual Community Engagement in Solid Waste Collection and Disposal

Local communities around the world are often relegated to passive roles as recipients of government services, frequently excluded from local decision-making processes (Tadesse, 2006). This approach leads to communities not recognizing their pivotal role in solid waste management. Consequently, amid various approaches to solid waste management, community participation emerges as a potentially vital yet often overlooked component in the quest for enhanced solid waste management (Chisanga et al., 2023). Notably, extensive research efforts have explored community participation, even within the realm of recycling behavior (Barr, 2004). These studies have yielded compelling findings, supporting the active involvement of communities in solid waste management. It's worth noting that limited landfill space, coupled with community reluctance to have landfills near their residences due to environmental and health concerns, necessitates moving away from autocratic waste management approaches in favor of community engagement (Barr, 2004).

Numerous global experiences highlight the potential for efficient solid waste collection and disposal when well-planned and implemented by local community members. In Latin America, cooperatives and NGOs actively participate in solid waste collection, separation, and disposal. In Brazil and Argentina, Community-Based Organizations (CBOs) have incorporated waste collection, separation, and disposal components, with the goal of establishing sustainable recycling to create affordable organic fertilizer (Fiensten and Morris, 2015). This approach mobilizes local communities to actively engage in collecting and producing low-cost organic fertilizer from generated solid waste.

Sauro's (2000) study on Residential Solid Waste Management in India identified critical gaps in solid waste management practices, underscoring the potential effectiveness of community involvement. The absence of systematic waste sorting from the source to disposal sites was a notable shortcoming (Joardar, 2000:322). In India, incineration proved ineffective due to the heterogeneous composition of solid waste, necessitating a pivotal role for households in sorting waste at the source. Without such sorting, sustainable solid waste management becomes challenging. The prevailing waste collection and disposal practices in developing countries, such as Zambia, further underscore the necessity of community engagement to rectify the impacts of poor waste disposal.

Joardar (2000:322) also highlighted that "the most widely practiced municipal disposal method has been uncontrolled dumping, concentrated in low-lying fringe locations, leading to leachate percolation, pollution

runoff, and soil, groundwater, canal, and river contamination." Uncontrolled dumping, when indiscriminately practiced by local communities, poses severe consequences, as observed by Sauro (2000). Dumping, considered destructive, can be controlled and its impacts reversed only when communities actively participate in solid waste management and disposal processes.

Although community participation may entail substantial time and financial investment and may not always be perceived as significant, it is indispensable when discussing sustainable development. In contemporary development discourse, recognizing the importance of non-expert experiences and knowledge of people has heightened the need for collective decision-making in various contexts (Barnes, 2005). Thus, the input of local communities should not be disregarded in any development sector, given their potential influence on the course of national development.

While the significance of community participation in solid waste management may not be immediately evident, it is crucial to discern its role in the effectiveness and success of various waste management methods. Recycling, a widely researched approach to waste management, is undeniably impactful. However, alternative environmentally friendly methods can also be embraced for effective solid waste management (Mackaness 2005, cited in Bekin et al., 2007:274).

In a study conducted by Bekin, Carrigan, and Szmigin (2007:277), solid waste reduction was found to be achievable in communities engaged in the production of consumption goods, like vegetables and fruits. These findings revealed a concerted understanding of the necessity for deliberate measures in sustainable solid waste management. Local communities actively partook in recognizing the need for collective efforts and agreements regarding waste collection and disposal. This emphasizes the requirement for social cohesion, affirming Tsai's (2007:45) conclusion that "households residing in regions with a higher degree of social capital are more likely to participate in waste management." Strengthening social capital within communities enables them to devise tailor-made, sustainable solutions for handling and managing solid waste effectively.

To summarize, the cited studies collectively emphasize the vital role of community engagement in solid waste management. They underscore that well-informed, inclusive, and socially cohesive community participation is instrumental in devising practical and sustainable approaches to solid waste management. The active involvement of local communities, not just as recipients but as stewards, is central to addressing the global challenge of solid waste management effectively

Theoretical Framework

The Theoretical starting point of this research study is communication with a focus on practices of community engagement. The two theories to be looked at in this section are the Public Participation Theory in Environmental Concerns and the Habermasian Public Sphere Theory.

Public Participation Theory in Environmental Concerns

This theory promotes the idea that all community members should ultimately take up concern in ensuring that the resources are taken care of and protected by every citizenry. The fact that all the community members regardless of their race, religion or socio-economic status use natural resources and their actions affect the environment in different ways is reason enough to consider the role of community or public participation in sustainable development. Freire (1972) argued that insisted on having the community conscientized so that every member of the community would actively participate in keeping the environment safe. Community engagement can assist the public especially at community level to help themselves as well as contribute to the nation's sustainable development. Public participation comprises several activities related to environment education and solid waste management where people share power

and plan together the implementation of the community real needs.

The theory commends that every community stakeholder is actively involved in all stages of community development starting from policy formulation, planning, implementation, monitoring and evaluation of any Solid waste management projects. Being actively involved in all stages of community development helps community members to appreciate the need for the project and would holistically take up the responsibility to implement the project till the end (Robbins, 2001). This theory aims at utilizing the available knowledge and the dormant useful skills in the local people with emphasis on positive attitude towards the environment by the community. The valuable skills are developed in local people and the existing knowledge as human capital is identified and put to direct use in environmental management (Freire, 1972).

Zambia has been boosting or encouraging community participation through different ministries in a quest to care and protect the environment and use the available resources in a sustainable manner. Public participation can strengthen the process of decentralization and devolution of powers. Community education and development is a wide concept used and if well harnessed can help to mitigate challenges and develop communities by inclusive participation through primary schools widely spread in every community. Many are the times that outside concepts or projects are introduced to the community and fail to utilize them to the benefit of the local community because communities are not fully involved in SWM projects A community is a vehicle that can be used as a developmental tool in bringing about development and at the end benefit or face adverse effects of underdevelopment and environmental challenges (Kyambalesa, 2005).

A community is a group of people created from a sense of shared identity, mutuality and common interest. The group may be drawn together to a geographical location subscribing to shared values, norms, beliefs and attitudes for the purpose of work, common interest or relationships. Peters (1998) states that the community exists when a group of people perceives common needs and problems, acquires a sense of identity and has common sense of objectives. Development is the process through which individuals or communities strive to improve skills, knowledge, attitudes to enable them prudently and efficiently utilize the resources sustainably for the improvement of their quality of life. Development should be community oriented and any environmental projects, planning, strategies or programs must be implemented in line with community needs or problems. The community is paramount in ensuring that environmental programs whether locally or internationally initiated are welcomed or rejected before implementation. Community development is a movement designed to promote better living for the whole community with the active participation and on the initiative of the community (Kamel, 1994). This is why the community should be involved from the beginning through to the end of the environmental and developmental project.

The local community must be aware that SWM programs at hand belong to them. Many such projects introduced by the government, non-governmental organization, and private companies, individuals or international organizations to the community may run smoothly if the local people are integrated. However, if local people were not involved, sooner or later SWM programs may either be abandoned or vandalized by the local community. Many projects in many communities have remained static and sometimes destroyed because they lack ownership by the community. Community participation should emphasize community development programs which include agriculture, education, housing, sanitation, waste management, health and poverty eradication where the community owns and takes part in the project (Lewin, 1946)

Nevertheless, it is imperative to train and educate the local community on developmental and environmental issues which can bring about improved quality of life. It may not be true that every member of the community could be ignorant of new developmental projects and environmental challenges. However, some community members might need environmental education on planned projects and environmental issues. This could be done through community education, conscientisation and environmental education. Freire (1972) referred to conscientisation, which is a form of transformational learning as an educational approach which does not profess political neutrality but takes sides with the poor in an attempt to free the learner and

the educator from the twin bondage of silence and monologue. It is better to work with a knowledgeable community which can actively participate in the environmental projects. It may even be wise to allow the local people who have the knowledge, skill and expertise to train and educate others on new community projects. The composition of some communities may include retired professionals and other trained personnel who could be of great assistance to developmental projects. Environmental education on SWM can be used to prepare communities learn about environmental issues and encourage them take full responsibilities as they take part in community matters.

Habermasian Public Sphere Theory

The community sphere concept was first developed in Jürgen Habermas' 1962 treatise (Thomas, 2005). It has a multifaceted and long genealogical alterations; enlightening criticisms and ever-changing connotations. Thus, it has many meanings among them is political, social and philosophical. In this study, its use has political facets of participatory spaces that can amplify community voices in forming community opinion (Koçan, 2008). The notion's roots are meeting places for the community to discuss and express their desires and needs without coercion (World Bank, 2009).

The community sphere's argued connotations and applied presentation are essential to controversies about politics, society, rationality, and public life (Pinter, 2004). Its connotations and applications assimilate and arouse many deliberations on normative [theoretical or practical] expectations appreciated for providing clarifications to social change difficulties and statement processes in egalitarianisms (Juarez & Brown, 2008; Pinter, 2004). Its conceptual form by Habermas is associated with democratic deliberations and their shortcomings (Pinter, 2004). According to Khan et al (2012), the community sphere offers prospects for citizens to act as a public body in an atmosphere that guarantees freedom of assembly and publishing opinions through communicative actions maintained by the manner community affairs are conducted.

The origin of the bourgeois community sphere in social organizations and political philosophy was important for Habermas to draw the public sphere normative model and seek answers to questions about what makes democracy work (Mafuta, 2014; Carpentier, 2011). Democratic beliefs of the community sphere emphasizes on the provision of public arenas where citizens talk, community views are collected by authorities and responsibilities assigned to some actor to ensure shared goals are achieved and feedback provided to others no matter the results Habermas, et al (1974). Community engagement practices in the community spheres are based on the principle of "public-ness" which symbolizes a physical entity and "openness" and communicative actions implanted in the view of "marketplace ideas" that transform (otherwise) private people into a public through different ways of communication (Habermas, 1989; Thomas, 2005).

The community sphere knowledge is essential in participatory approaches through which people seek answers when they feel there are lawfulness deficits in prevailing policies, practices, or situations (Kemmis & McTaggart, 2005; Habermas, et al., 1974). Nevertheless, community or public sphere scholarship acknowledges that there are times when the public is reduced to spectators while expert opinions replace 'true' public opinion (Ubayasiri, 2006). It is contended that the efficiency of participatory processes depends on the extent of access (space to be heard); the degree of autonomy (actors' freedom from coercion); the rejection of hierarchy (depoliticisation); the rule of law (subordination of the state); and the quality of participation (Rutherford, 2000). The principal aim of the community sphere theory is to create shared communicative spaces that allow people think, talk and act together openly and with a commitment to make a difference in a particular community.

Reciprocal communication between actors is envisioned in community spheres. But in cases where for example authorities publish information without listening to multiple publics; then the community sphere does not exist as discursive closures suppress particular views (World Bank, 2009; Deetz, 1992). It is argued

that downgraded groups in the public sphere may form parallel conversational arenas, which could be understood as insubordination to deficit democratic processes (Marko 2016). Employing struggle within the democratic theory, Markovits (2005) argues that democratic noncompliance to policy or decision by the public could connote democratic deficits and done in looking for correction of the deficits that threaten collective authorship of shared goals.

Community Engagement

Community engagement is understood and followed differently. This phenomenon is conceptualized by some scholars as an ideology, approach and culture while other scholars conceptualize it as a method or guidelines to achieve a particular goal (whether the objective is to meet community engagement wants or consult people to sanction already made decision which is described as 'transformative and instrumental' engagement (Chisanga et al., 2023). Practices that are considered as engagement can be situated within a typology to differentiate the degree and kind of engagement. The study will utilize the participative and deliberative perspective of community engagement. The ladder of participation by Arnstein's as expanded below is used to place practices in community engagement process (in SWM) within a particular level of participation (Bank of Zambia, 2010).

The transformative perspective community engagement has participative and deliberative entails a shift from the notion of "professionals know best" to inclusion of grassroots' knowledge in decision making by altering structural or institutional practices that lead to marginalization and exclusion. Smith (2003) argued that conversational processes provide for legitimized dialogical participation through non-coercive communication, which can reduce the distance between policy makers and citizens and this increases possibilities for more engagement, ownership and control of the public spheres and practices within them. Community engagement is deeply embedded within complex realities and this makes it to be a struggle of ideologies and spheres to be involved, speak, and to be heard. Access and interaction which are based on the principle of providing actors sphere to be heard are important conditions in community engagement.

Nevertheless, they are many positive implications in complex and dynamic problems of participatory and deliberative processes. Among these complex and dynamic problems is solid waste management (SWM), uncertain and multi-scale environmental problems that affect many actors and agencies (Reed, 2008), and it require multi-actor to improve its management. Engaging various actors in policy or decision making that will help fine tune decisions to local contexts, which might minimize implementation hitches arising from oversights. It is contended that when seeking to improve community lives, including local actors (Preferably from the beginning) could provide vital insights such as losses or harms to local people or environment) planners could have overlooked (Corburn, 2003; Cox, 2010). Nonetheless, there are times when the community is involved but their views are excluded by the authority during policy or decision-making. In some cases, distortions such as manipulation, coercion or misinformation by the authority limit levels of deliberation to enlightening others.

Regardless of problems and pitfalls in achieving engagement assured goals; its appeal cuts across many facets including planning, decision-making or research (Chambers, 1997). As stated above, community engagement levels will be assessed Arnstein's ladder of participation. The eight-rung ladder has nonparticipation (manipulation and therapy), tokenism (informing, consultation and placation), and citizen power (partnership, delegated power and citizen control) as main participation typologies (Arnstein, 1969). Arnstein regards manipulation and therapy as non-participation, but a way by power holders to 'educate' or 'cure' community members who are participants. Informing, consultation and placation rungs are tokenistic as they provide minimal power to participants to change things. Community member's (Citizens) power is on top of the ladder. It is underpropped by the degree of power for 'have-nots' to negotiate, make tradeoffs and have a stake in policy or decision-making (Arnstein, 1969; Kessy, 2013).

Community Power

The notion of power is understood from different angles or perspectives including social, ideological, political, feminist or relational. In this survey, the notion is used in reference to social power (power over and power to). Nevertheless, social power can be economic, authoritative or expert. Social power can be used by different actors either for the common good or to coerce others. Oliga (2000) interprets social power as the ability to achieve common goal (power to) or to express and exploit others (power over). According to Giddens (2004), meanwhile some players are privileged to access allocative and authoritative resources (they have control over the resources and people), and tend to 'create them-us' divisions by exercising power over others. The repercussions of this phenomenon (them-us division) is the conception of skewed power relations that give some players advantage to control interactions while limiting others players' engagement in community participation (Foucault, 2010).

Unnecessary power relations are distinctive in social power circumstances where 'people' are socialized to live in what exists even when it is unjust (Ibid) rather than them being co-creators of common goals. Power rattles emerge in participatory processes as powerful players impatiently chase goals that upsurge their enjoyment of good life. Player or actors with social power are able to develop systematic benefits from the subordination of others using many methods such as force; and in the process inhibit the ability of other actors or players to develop and use their abilities, express their needs, thoughts and feelings (Tew, 2006). Nonetheless, Weber (1946) cautions that people's capability to make others do things against their wishes can be confronted through rebellious actions to express dissatisfaction. The use of force means thus does not warranty public compliance to the system.

Even though denied right of entry to their lifeworld resources and expansive spaces; players subjected to oppressive power could become adept at resisting or subverting prospects of them from power holders (Tew, 2006). Tew (2006) argued that actors in forcible environment can find policies to form networks to negotiate and liaise in seeking 'exit doors' to endure outside the tough environment. Nevertheless, it is argued that powerful actors or players over and over again build structures that strengthen their control, limiting supplementary freedoms of expression and assembly to actors that are lowers (Fairclough, 2001).

In contradiction to the Habermasian principle of openness in public proceedings to help actors utilize their shared capital to achieve common goals argued that forceful tendencies in premeditated arenas can be so authoritative that the influence of lowers become less and less. It is argued that when the abilities of other actors to take action in a process are forced, then their power doesn't exist as they cannot put into action. Hence, the failure in engagement processes can lead to ideas or philosophies being executed on others by influential individuals, groups and organizations. The life world becomes uninhabited, and communicative actions which were meant to reach commonality tend to be used to dupe or bully other actors into submission (Inglis, 2012)

Community Trust

In environmental and public policy in general the concept of trust is very important. The prominent role of trust is facilitating collective actions and providing legitimacy (whether legitimacy means acceptance or support) to institutions, policies and actors' roles in executing collective actions. Much of the literature of community engagement (Participation), planning or deliberative processes consider trust (and its restoration) as a vital component to score higher on participatory or deliberative scorecard.

In understanding the concept of trust, the term can be drawn from psychological, historical, anthropological or other fields or school of thought; each approaching the notion with precise punitive lens and filters (Tsang, et al.,2009). In this survey, it is drawn from the social perspective, which accentuates on major roles

trust plays in social process such as participation or cooperation that are grounded on relations built through interaction (Gilson, 2003). The connotation of social trust lies between people, people and institutions, and people and social processes. Nevertheless, citizen trust in government facilities collective action that can improve outcomes from environmental decisions and can provide legitimacy to public institution.

Trust shape actor's willingness to cooperate towards a common goal even when not all their wishes have been met. However, the opposite can also happen. Reduction in social trust is characterized by reduced faith and self-confidence in government organizations (Tsang, et al., 2009). Though trust is sad to be riddled with inconsistences and complexity to shape and maintain, it has been argued that employing an agenda without trust through the use of forcible resources is extensively detrimental. Players can refute resolutions that are aloof from their lifeworld authenticities. Kwong (2004), argued that without trust in government and limited space to influence decisions; people for example in China tend to seek ways of articulating themselves such as via newspaper columns and editorials. Intellectuals hypothesize that trust encourages amenability to laws and regulations and enhances democratic governance efficiency. Building trust in public organization or institutions (and other players) is thus vibrant for state action lawfulness and meeting public support (Gilson, 2003). Social interactions and interrelationships formed by players based on trust that others would meet their responsibilities towards common goals strengthen collectivity.

Embracing truthful conduct and practicing trustworthiness either by accepting sharing decision-making power or providing premeditated spaces is required even amid distrust among others (Tsang, et al., 2009). It is however collective for the ruling classes to use force when citizens are disobedient. However, it is argued that reimbursing consideration to both trust and distrust is central in community engagement as they are expressive actions by citizens over shortfalls in the system or process (Tsang, et al., 2009). Distrust upsurges the cost of businesses by requiring more laws, monitoring or enforcement; and decreases government efficiency by rendering decison making and implementation more problematic (Laurian, 2009).

Households have trust issues with the LCC mostly due to their past experience with it. When you talk about LCC, for example, in terms of providing services to the community, households may say the LCC is "never really there or that they have no confidence in them." Community based enterprize (CBEs) are not trusted as they collect the waste and dispose it within the area; mostly because they hire freelance collectors who are in a hurry to finish the work and go do other things. CBEs clean drainages and leave the waste for days due to lack of transport to take it to waste bins. As a result, the waste gets back into the drainage as vehicles push them back. The CBEs end up doing same things every day instead of collecting waste from other areas.

Other trust issues have emerged within households themselves. With the introduction of the Fast Track Court by the LCC, some households report others for illegal dumping of waste and they get summoned or warned by the WDCs. This has created mistrust among households (Ibid).

Community Motivation

Motivation is an essential incentive which can drive the community in participating in Solid waste management projects and environmental concerns. However, the best motivation should be an assurance that the scheme belongs to the community and they own it. During community work, material things like food, clothes or beddings may be provided. Some years back, communities were involved in road maintenance and cleaning their surroundings because they knew that they owned and depended on such resources. Motivation can shape or build individual community membership the desire and willingness to participate with competency in community projects and environmental issues such as poor solid waste management (Peters, 1998).

As aforementioned, one of the main objective is to assess community engagement in solid waste management by providing information to the population on environmental issues. Motivation is then

expected to be followed automatically. The planned information and education activities include mass media training, group campaigns, video forums, pamphlets, and home visits. In preparing the material, focus should be placed on the following points, conveying short and clear messages which creates awareness of personal responsibilities and obligations of the individuals in maintaining clean and healthy conditions, defining the role of the municipality as regards its potentials and limitations, forming on the duties and responsibilities of the individuals and community in cooperating with the municipality and informing on the advantages of cleanliness in the promotion of health (Ibid). The roles played by the different key community members should be identified before involving the community as a whole. With regard to SWM projects, women are key community members as they are responsible for maintaining a healthy and clean household and are directly affected by inadequate waste management at the household and community level. Informal meetings with women must show a keen interest in improving their sanitary condition.

This section highlighted the reasons for conducting this research through the review of what other scholars have written on community participation. Literature reviewed shows that in developing countries including Zambia, the reality is that majority of the local authorities have inadequate capacity to not only collect but also manage solid waste generated by the population. The studies also show how the community approach can be instrumental in the creation and promotion of effective and sustainable waste management systems. Low level to none existent coordination between the community and local authorities has the potential hinder the sustainability of solid waste management systems. This study hopes to fill this gap by evaluating the effectiveness of the community approach in solid waste management within Lusaka City.

METHODS AND MATERIALS

This study utilized a mixed-method research design, incorporating both qualitative and quantitative methodologies to gather comprehensive data regarding attitudes, opinions, habits, and societal concerns within the context of Chelstone. Structured questionnaires were distributed to individuals to elucidate authentic insights into the perspectives of Chelstone's residents. Purposive sampling was employed to select key informants from the Lusaka City Council, while a simple random sampling technique was used to choose respondents from households in Chelstone Township, ensuring equal opportunities for inclusion. Chelstone Township residents were selected as study participants due to their direct engagement with the community environment, while officials from the Lusaka City Council, particularly the Waste Management Unit (WMU), were integral to the research as primary implementers of Solid Waste Management (SWM) within Lusaka City.

The sample comprised 60 randomly selected respondents from households in Chelstone Township, along with one key informant from the Lusaka City Council, ensuring gender balance among community members. Data necessary for addressing the research inquiries were collected through structured interview guides for key informants and semi-structured questionnaires for selected households. The researcher facilitated questionnaire administration to the Chelstone Township residents, providing immediate assistance when required.

Data analysis involved triangulating information from diverse sources, leveraging the strengths of mixed methods. Quantitative data from surveys underwent statistical analysis using SPSS and Microsoft Excel to derive numerical insights, while qualitative data from interviews and observations were thematically coded to extract nuanced narratives. Integration of these methodologies enriched understanding, yielding a comprehensive view of the research findings.

Ethical considerations were paramount throughout the study. Participant identities remained confidential, and they were not obligated to disclose information beyond the scope of the questionnaires. Additionally, participants were assured that their responses would be treated with confidentiality and anonymity, with no

disclosure to third parties without their explicit consent.

RESULTS

Introduction

The purpose of the study was to assess community engagement in solid waste management using a case study of Chelstone Township in Lusaka. This chapter presents the finding on this study in relation to the specific objectives and research questions that were posed by the researcher. It presents findings from field data on the demographic background of respondents, the role of the community in SWM, the level of community engagement in SWM, the degree of community participation in decision making and planning in SWM, level of community awareness about SWM, community attitudes towards participation in solid waste management, challenges facing the community and other stakeholders in SWM and the impact of community engagement in solid waste management. It also presents findings on what can be done to enhance community engagement in SWM at the household level.

Gender Distribution of the Respondents

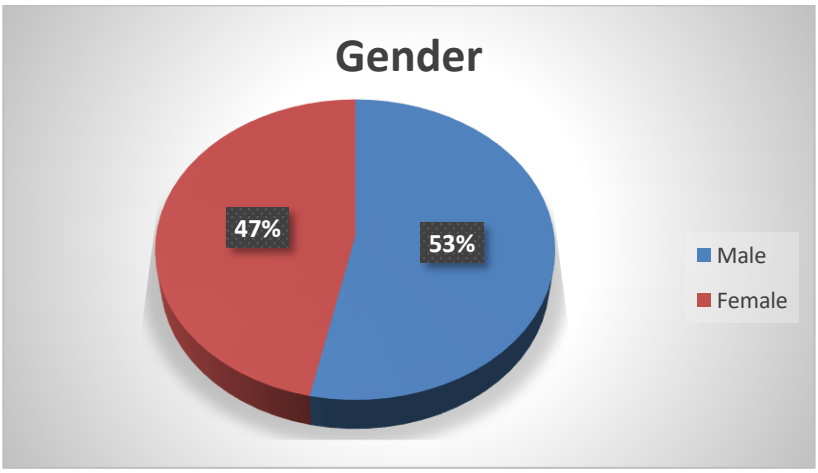
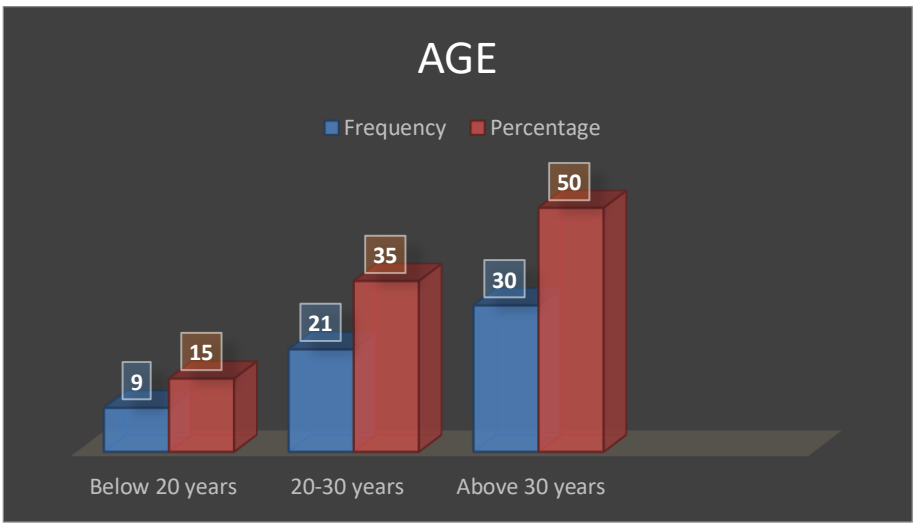


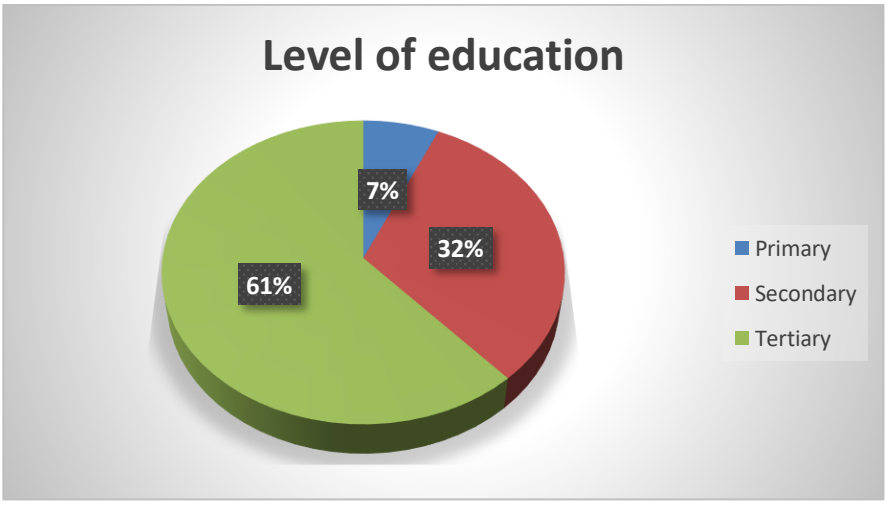
Figure 4.1 shows that the majority of the respondents representing 53% were males as compared to females representing 47% which reflected that men are still key players when it comes to issues of solid waste management.

Age Distribution of the Respondents



From figure 2, the majority of the respondents fell under the age group above 30 years representing 50% were actively involved in solid waste management related matters.

Distribution of the respondent's level of education



In regard to their education levels, the results show that the majority of the respondent had acquired a college level of education representing 61%, 32% were secondary level and 7 % were primary school level as shown in Figure 4.3. The study results show that majority had gone past the secondary level of education which is the basic level of education and therefore improved their chances of gainful employment and self–employment as well as improved knowledge on solid waste management related issues.

Distribution of the Respondent's Years of Living in Chelstone.

Years of living in Chelstone	Frequency	Percentage
Less than a year	7	11.7
Between 1-5 years	10	16.7
Between 6-10 years	17	28.3
Above 10 years	26	43.3
	60	100

In terms of the years in Chelstone, majority of the respondents representing 43.3% lived in Chelstone for more than 10 years, 28.3% lived between 6-10 years, 16.7% of the respondents lived between 1-5 years and less than a year representing 11.7% of the respondents respectively.

Main Types of Solid Waste Generated in Household

Main types of solid waste generated in household	Frequency	Percentage
Vegetables and food remains,	16	26.7
Glass and Plants	7	11.7
Plastics/Bottles/ Cans	8	13.3
Other (Specify)	29	48.3
Total	60	100

Table 4.2 shows the main types of solid waste generated in household ,26.7% representing vegetables and

food remains, 11,7 representing glass and plants, 13.3% representing plastic/bottles/cans and 48.3% of the solid waste generated in household represented all the main types of solid waste generated respectively.

Solid Waste Collected From Household

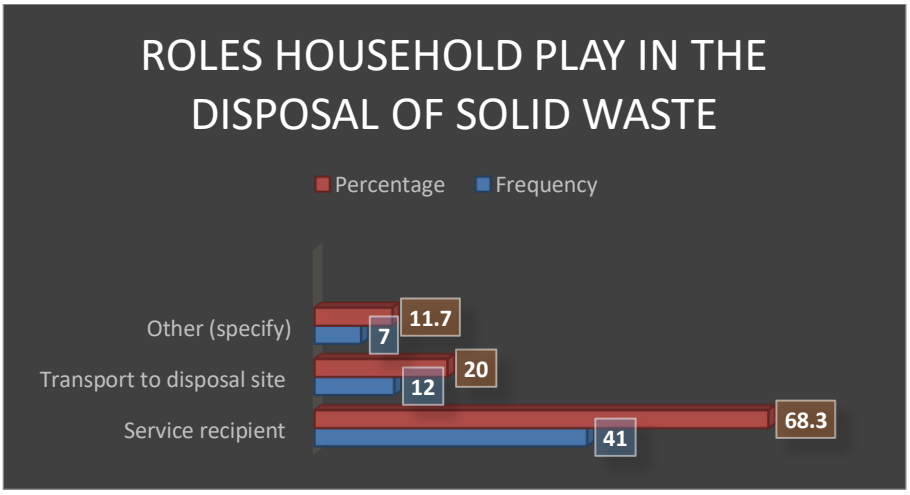
Figure 4.4, shows that majority of the respondents representing 97% agreed that solid waste were collected and 3% of the respondents did not agree. This therefore show that much has been done when it comes to solid waste collection from households.

Roles Household Play in The Collection Of Solid Waste

Roles household play in the collection of solid waste	Frequency	Percentage
Service recipient	42	70
Transport to communal collection point	13	21.7
Other (Specify)	5	8.3
Total	60	100

The table shows the roles that households play in the collection of solid waste and one of these roles is service recipient representing 70%, 21.7% representing transport to communal collection point and 8.3% represented other roles household play in the collection of solid waste respectively.

Roles Household Play in the Disposal of Solid Waste



The figure shows the roles that households play in the disposal of solid waste and these roles are service recipient representing 68.3%, 20% representing transport to communal collection point and 11.7%

represented other roles household play in the collection of solid waste respectively.

Community Participation in Solid Waste Management

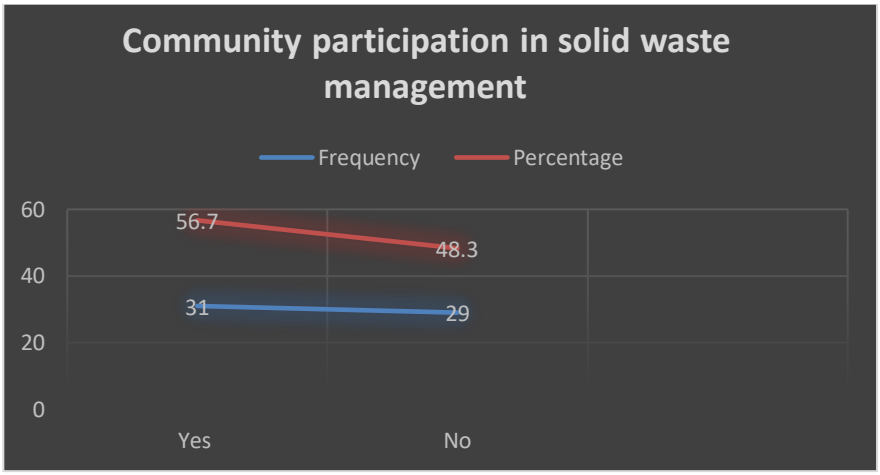


Figure 4.6 shows the respondent's knowledge about solid waste management, majority of the respondents representing 56.7% had knowledge of what solid waste management is all about and 48.3% of the respondents had no idea. Therefore, communities need to be sensitized about solid waste management.

Awareness on Community Roles In Solid Waste Management

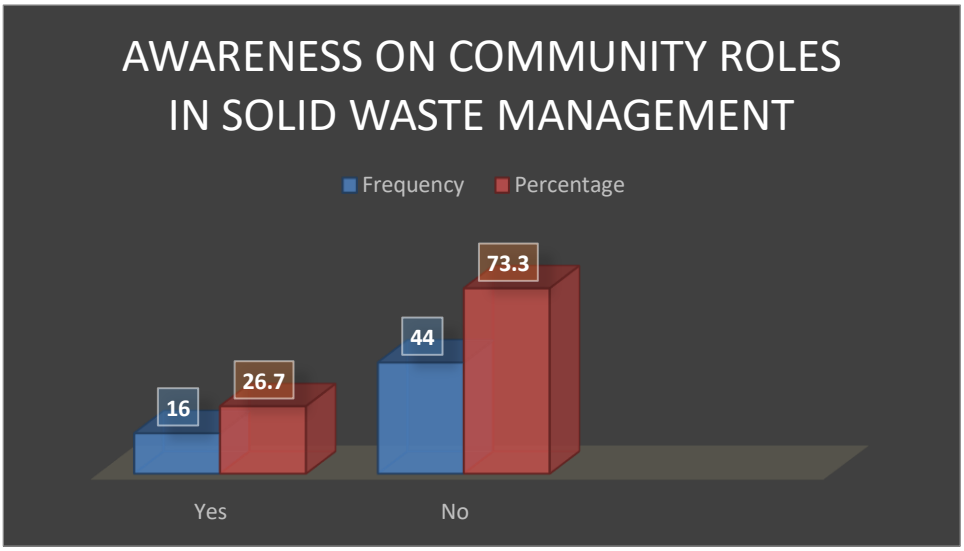


Figure 4.8, shows guidance or awareness on community roles in solid waste management provided by the city council. The figure illustrates that majority 73.3% of the respondents were not aware about the city council guidance only 26.7% of the respondents were aware about the city council guidance on community roles in solid waste management.

Cross Tabulation of Awareness On Community Roles In Solid Waste Management And Levels Of Education

		Awareness on Community roles* Level of Education			
	Primary	Secondary	Tertiary	Missing	
Yes	1	4	11	0	
No	3	15	26	0	

sum	4	19	37	0	60

Table 4.5 shows a cross tabulation of awareness on community roles in solid waste management and levels of education. To begin, it is worth noting that the majority of respondents (37 individuals) in the "Tertiary" education category had the highest level of awareness (11 individuals) regarding community involvement in solid waste management. This suggests that higher levels of education may be correlated with a better grasp of the significance of community involvement in trash management.

Conversely, Individuals with lesser levels of education, particularly those in the "Primary" and "Secondary" categories, have lower levels of awareness than their more educated counterparts. Only one person in the "Primary" group and four in the "Secondary" group expressed awareness. The cross-tabulation results show a positive relationship between higher education and community roles in solid waste management. This knowledge can lead focused actions to raise awareness, resulting in more effective community participation in sustainable waste management practices.

Attendance on a City Council Organized Seminar, Public Address or Awareness Gathering On Issues Related To the Community In Solid Waste Management

Attendance on a city council organized seminar, Public address or awareness gathering on issues related to the community in solid waste management	**Frequency**	**Percentage**
Yes	4	6.7
No	56	93.3
Total	60	100
Attendance in local planning and decision making meetings on solid waste management matters	**Frequency**	**Percentage**
Yes	7	11.7
No	53	88.3
Total	60	100

Table 4.7, shows that majority of the respondents representing 93,3 never or did not attend a city council organized seminar, Public address or awareness gathering on issues related to the community in solid waste management only 6.7% did attend the seminar. However, on the other hand only 11.7 of the respondents took part in local planning and decision making on solid waste management related matters and majority of the respondents representing 88.3% did not attend or took part in local planning and decision making on solid waste management related matters and this was because people in the community were not guided or given sufficient information on solid waste management related matters.

Cross Tabulation Of Attendance on A City Council Organized Seminar, Public Address or Awareness Gathering on Issues Related To The Community In Solid Waste Management And Gender.

		Attendance on a city council organized seminar			***Gender**
	Male	Female	Missing		
Yes	4	0	0		
No	28	28	0		
sum	32	28	0	60	

Attendance at a municipal council-organized seminar on solid waste management and gender gave some

surprising and important insights on community participation and gender dynamics in tackling major local challenges. The findings are described below:

Attendance at Seminars by Gender: There were 32 men and 28 women among the 60 people sampled. Surprisingly, no ladies attended council seminar, but four of the 32 males did. This huge gender disparity in attendance is cause for alarm.

Gender-Related Consequences: The lack of female attendees at a solid waste management seminar is a notable discovery. It could indicate a larger issue with female inclusion and participation in community-driven activities. It calls into question whether such activities are accessible to women and whether the city council is properly reaching out to diverse sectors of the community.

Participation in the Community: The fact that more people did not attend seminars (a total of 56) than did (4 males) indicates a probable lack of interest or awareness about solid waste management among the assessed community. It suggests that the municipal government should make a greater effort to promote such events, possibly through focused outreach and awareness initiatives.

Consequences for Solid Waste Management Initiatives: The findings underscore the need for a more inclusive and gender-sensitive approach to community participation and solid waste management education. The municipal council should investigate steps to enhance women's participation, as their ideas and involvement are critical in efficiently resolving community issues.

Finally, these findings highlight the necessity of assessing the inclusivity and reach of community activities such as the city council-organized seminar. The lack of female attendance raises concerns about gender equity and community engagement, and the overall low turnout shows that more aggressive measures to improve knowledge and participation in crucial topics such as solid waste management may be required.

The Role Played by the Community in Solid Waste Management the House Hold Level

The findings regarding this objective are presented in the table below.

Roles Played by the Community in solid waste management at Household level in Chelstone Township

Role played by community members in SWM	**Frequency**	**Percent (%)**
Packaging of solid waste in collection bins	36	60
Sorting out of solid waste	11	18.3
Paying for the collection of solid waste	13	21.7
Total No of response	60	**100**

Source: Field Data

Table 4.9 above reveals that's 36 representing 60 % of the respondents agreed that they were packaging solid waste into collection bins in bins before taking them to solid waste collection points. On the other 11 respondents representing 18.3% revealed that they separate or sort our solid waste before disposing them off. The finding of this study also reveals that the household also play a significant role in solid waste management by paying a collection fee to the companies engaged by the Lusaka City Council. At least 13 respondents representing 21.7% acknowledged this fact. What these findings entails is that the majority of the community members at the household level are actively involved in solid waste management. However, according to an interview conducted with officers from the solid waste management unit, members of community do not usually cooperate when it comes to paying for the collection of solid waste from their homes. This makes it difficult for the LCC to effectively collect solid waste from the residential area thereby

causing delays as well as indiscriminate dumping of solid waste.

Level of community Participation in the Decision making Process in Solid Waste Management

Based on the interviews conducted with the Lusaka City Council (LCC), members of the community in Chelstone Township are represented by their respective ward councilors the in decision-making processes regarding solid waste management. These ward councilors are part and parcel of the Ward Development Committees (WDCs). These WDCs are responsible for making all the decision decision-making regarding SWM at ward level. Furthermore, members of the community engaged on many issues of SWM through the Lusaka City Council Facebook page. The members of the community are also encouraged by the LCC to make phone calls and even visit the LCC officers to air their concerns regarding SWM.

From the findings of this study it can be noted that the members of the community are only able to participate through their respective councilors. The councilor's voice in this regard is just one voice and does note denote actual and definite engagement of the households in the entire planning and decision making process on solid waste management. As the consequence only few actors are involved through the WDCs. On the other hand, community based enterprises (CBEs) do not even engage the households in the community in the planning and decision making process relating to solid waste management.

Accordingly, for one join the WDC he or she has to win an election or nominated by members of the community within the ward. Nevertheless, the WDC is made up of the ward councilor, ruling political party officials such as chairpersons for the respective Ward, Constituency and other party officials. The grassroots has been turned into political party strongholds with reduced emphasis on community participatory processes. Some households revealed that the ruling party has perpetrated a tendency of picking people from the party structures at the grass roots to constitute the ward development committee. This unfortunately contrary to WDC guidelines of 2013 (MLGH 2013). As a consequence, the members of the community at the household level who are supposed to be key players in solid waste management have been excluded from the participatory processes by replacing them with the ruling political members. Hence, critical challenges affecting the members of the community in SWM have not received the much needed attention or they not attended to because political interests tend to supersede the interest of the community.

WDCs are supposed to provide an effective link between members of the community, ward development organisations such as community based enterprises and the Lusaka City Council (MLGH, 2013). However, according to the interviews conducted with LCC, it was revealed that that the ruling political party just allocate its members to make WDCs against the guidelines which provide for the involvement of community members from all zones. Therefore, WDCs are mainly seen to champion the agenda and interest of the ruling political part rather a conduit for facilitating discussion on the development needs of the community and providing feedback to the community on the issues discussed and agreed upon during WDC meetings. (MLGH 2013 for WDCs' guidelines).

The findings of this study has exposed the dominance of WDCs by political players. This study also reveals that there has been a significant lack of institutionalization of participatory principles and practices. The only way out of this problematic situation is depoliticization of the WDCs and promotion of direct community involvement in the planning and decision making process aimed at improving SWM. There is thus an urgent need for different stakeholders to formulate collective plans of action on factors negatively affecting the effectiveness of SWM.

The Attitude of Households towards the Indiscriminate Dumping of Solid Waste

The findings of this revealed some of the many reasons regarding people's attitudes towards indiscriminate dumping of solid waste. Some of the respondents mentioned that it part and parcel of the African dirty mind

which has a negative attitude towards a clean and sanitary environment. Other argued that Zambian do not appreciate the value of having a clean environment which is coupled with proper hygiene as seen in many surrounding shanty compounds of Lusaka.

As a consequence people who are born and raised in such places accept and see life in a dirty environment as a normal way of living. These finding are in line with the thoughts of The above Kyambalesa (2006) and Yamba (2004) who have opined that that the accumulation as well as dumping of solid waste in undesignated areas can be attributed to lack of concern for the quality of the environment. Hence, education and sensitization to the local communities is significant in the transformation of peoples' attitudes and behavior towards solid waste management. Some of the respondents interviewed acknowledged the fact that poor attitude and behaviour shown by most people as they handle solid waste at home and in town areas is as result of of lack of environmental education. These findings are in line with the findings of Akanmu (2000) who found that community participation was important for 'bring and collect' systems which depend on the sorting out of solid waste by households themselves (Akanmu, 2000). This is believed can transform people's attitudes who do not want to cooperate and pay the collection fee for the waste they generate. The findings from this study also reveal that there are very few recycling firms to recycle the issue the abundantly accumulated solid waste that could be recycled.

The other reason cited by respondents in this study was weaker enforcement of legislations and other related regulations resulting in failure to control indiscriminate dumping of solid waste. What this simply means is that poor government policies and weaker legislations on SWM have contributed to people having very poor attitudes towards solid waste management. Some of the responds acknowledged that this what has made people in various townships or communities to be dumping solid waste in a very indiscriminate manner without regard to the impact this behaviour could have on the environment and their own health.

The Impact of Community Involvement in Solid Waste Management at Household Level

The finding regarding the above objective are presented in table 4.5.1 below.

Distribution Respondents on effectiveness of Community Approach in Solid Waste Management

(N=60)

Has the engagement of the community in SWM been effective	**Number**	**Percent (%)**
Yes	21	35
No	39	65
Total	**60**	**100.0**

Source: Field Data

Table 4.10 above shows that 21 (35%) of the respondents agreed that engagement of community members at the household level in SWM has produced some minimal positive impact. Some of the positive impact which were highlighted included having a clean living environment, reduction in water bone diseases such as cholera, dysentery and diarrhea. Respondents also revealed that they have come to appreciate the importance of using the waste bins especially at home, in the streets, market places and bus stops. However, some of the respondents interviewed argued that the situation has not changed much and there is need for more sensitization and awareness campaigns if things are to change for the better in the area of solid waste management. On the other hand, 39 (65%) of the respondents argued that the engagement of the community in solid waste management has produced minimal positive impact at the household level. These findings thus clearly paint a gloomy picture regarding the improvements that have

been made in the area of solid waste management.

Accordingly, interviews with leaders of the wards revealed that there are still a few people who are do have sufficient knowledge about SWM and still do not see anything wrong with indiscriminate disposal of solid waste in areas that are not designated for such kind of disposal. They revealed that some people still throw indiscriminately solid waste in holes, drainages and bushes adjacent to their homes even when they have waste bins.
The findings of this study has demonstrated thus that knowledge dispensation about the significance of effective SWM to the community must continue until a change in attitude and behavior among community members is achieved.

The respondents interviewed also mentioned that in order to have a sustained positive impact in SWM, community members at the household level should be engaged at every level in the current SWM system. For example, members of the community member can be engaged in awareness campaigns and meetings on solid waste management. This is believed to be important as it can bring about a wider understanding of solid waste aspect among members of the community (Danny et al, 2004).

Factors Negatively Affecting the Engagement of the Community in Solid Waste Management

Although the researcher was examining the effectiveness of the community engagement in solid waste management, but the question regarding factors which negatively affect community engagement in solid waste management was also asked in order to gain insight on this issue. The findings of this study regarding this question are presented in the table below.

Factors Negatively Affecting the Engagement of the Community in SWM

Factors Negatively Affecting the engagement of the Community in SWM	**Frequency**	**Percentage (%)**
Insufficient knowledge about SWM among community members	10	16.7
Collection points for solid waste are located in distant areas	21	35
The main secondary solid waste collection as well as transport is not dependable	16	26.7
The LCC has been reluctant to resolve issues surrounding solid waste management	8	13.3
Lack of accountability and transparency regarding how the money collected from SWM services is spent.	5	8.3
Total	**60**	**100**

Source: Field Data

Table 4.11 above shows that, insufficient knowledge about solid waste management was mentioned by 10 respondents representing 16.7% as one of the factors negatively affecting the engagement of the community in SWM. Furthermore, 21 respondents representing while farness of the collection points were mentioned by 21 (35%) respondents cited long distance to the collection points as another factor impacting negatively on community engagement in solid waste management. While 16 respondents (26.7%) mentioned that the secondary collection solid waste collection and transportation are not effective and reliable at the same time. 8 respondents (13.3%) revealed that the LCC has been reluctant to resolve issues surrounding solid waste management and this has negatively impacted on community engagement in SWM. Lastly, 5 of the respondents (8.3%) interviewed cited lack of accountability and transparency regarding how the money collected from SWM services is spent as another factor negatively impacting on community engagement in

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solid waste management.

Ways through which Solid Waste Management can be enhanced

The finding of this study regarding the above question were summarized and presented below.

Ways through which Solid Waste Management can be enhanced

Recommendations	**Frequency**	**Percentage (%)**
Promotion of awareness campaigns to the members of the community on the importance of effective SWM	17	28.3
Engagement of community based organisations (CBOs), Non-Governmental Organisations (NGOs) and other private sector institutions to supplement the efforts of LCC in the provision of solid waste management services at the household level within the different communities.	19	31.7
Inclusion of members of the community in the decision making process as well as in the execution of agreed upon plans on SWM	9	15
Transparency and accountability in the management of funds collected from Solid waste should ensured	11	18.3
The authorities and companies responsible should regularly collect solid waste from collection points in a timely manner.	4	6.7
Total	**60**	**100**

Source: Field Data

Regarding the question of how solid waste management can be enhanced responses from the interviewed respondents were tabulated in the table above. The above table reveals that there is an urgent need to promote education and awareness campaigns to the members of the community on the importance of effective SWM as suggested by 17 respondents (28.3%). Other respondents interview representing 19 (31.7%) mentioned that there is serious need for effective engagement of community based organisations (CBOs), Non-Governmental Organisations (NGOs) and other private sector institutions to supplement the efforts of LCC in the provision of effective solid waste management services at the household level within the different communities surrounding Lusaka City. Furthermore, 9 (15%) of the respondents interviewed suggested that members of the community should be fully included in the decision making process as well as in the execution of agreed upon plans in SWM instead relying only on single voice of a ward councilor which is not entirely representative of the community voice due to the political nature of his/her office. In addition, some respondents representing 18.3% (11) recommended that transparency and accountability in the management of funds collected from the provision of solid waste management services by the authorities responsible should be ensured. Finally, 4 (.67%) of the interviewed respondents suggested that the authorities and companies responsible should regularly collect solid waste from collection points in a timely manner. The households themselves may also find it easier to because community to gather and sort out the solid waste and take them to the collection points. This problem can be effectively addressed if more stakeholder are engaged in solid waste management.

ANALYSIS AND DISCUSSIONS OF FINDINGS

This chapter delves deeply into the findings of the study, meticulously dissecting the landscape of community engagement in solid waste management within Chelstone Township. Through a critical lens, the

research examined the multifaceted dimensions of community participation, juxtaposing them against established theoretical frameworks and prior research endeavors.

At the heart of the study's revelations lay a nuanced reality: community engagement in solid waste management in Chelstone Township was only partially effective. The depth of this inefficacy became apparent as the research spotlighted the limited involvement of community members. While there were efforts made by certain individuals, the overarching participation primarily occurred through councilors, leading to a lack of diverse engagement from households. This finding resonated strongly with the argument put forth by Tadesse (2006), underscoring the global tendency to view communities as passive recipients of government services, thereby perpetuating a lack of awareness regarding their pivotal role in waste management processes.

The study meticulously identified the various roles that community members undertook, such as sorting waste and paying collection fees. These individual initiatives, while commendable, were hampered by prevailing negative attitudes toward waste management, especially among those who had grown up in impoverished conditions. To counter these attitudes and promote active participation, the study emphasized the need for informed waste collection practices, comprehensive environmental education, and robust enforcement mechanisms, echoing the sentiments expressed by Tsai (2007). The research findings echoed similar studies in Malaysia, emphasizing the significance of willingness to pay for improved waste services, as demonstrated by the research conducted there.

Despite these individual efforts, the impact of community involvement remained disappointingly minimal. A fraction of the respondents acknowledged positive outcomes, indicating a slow trajectory of progress. This gradual pace aligns with Barnes' assertion (2005) that public participation processes can indeed be time-consuming but are indispensable for sustainable development. The study identified a plethora of challenges impeding effective community engagement, ranging from the politicization of waste management to the insufficient knowledge among community members. Distant collection points, lack of transparency in fund management, and inadequate enforcement further compounded these challenges. These hurdles underscored the critical need for educational initiatives, stakeholder engagement, and transparent financial management strategies within waste management programs, echoing the findings of Sauro (2000) and Tsai (2007).

The recommendations offered by the respondents provided valuable insights. They underscored the urgent need for extensive education campaigns, proactive stakeholder engagement, transparent fund management, and the punctual collection of waste. These suggestions dovetailed seamlessly with Clairvair's findings (2006) in Barbados, emphasizing the pivotal role of private sector participation and transparent waste management practices. Furthermore, the study reaffirmed the fundamental tenets of the public participation theory, advocating for the active involvement of all stakeholders in every stage of waste management projects. However, the study shed light on a stark disparity: while theoretical frameworks championed comprehensive community involvement, the practical implementation in Chelstone Township remained circumscribed, hindering the holistic execution of waste management projects.

In essence, this chapter meticulously dissected the challenges and opportunities encapsulated within the realm of community engagement in waste management. By scrutinizing these facets through a detailed lens, the study not only revealed the complexities of the issue at hand but also underscored the critical necessity of bridging the chasm between theoretical ideals and on-ground realities. The study's findings highlighted a pressing need for concerted efforts, advocating for educational initiatives, stakeholder collaborations, transparent practices, and timely interventions. Through this detailed analysis, the chapter provided a comprehensive understanding of the multifaceted dynamics that underpin community engagement in solid waste management, paving the way for informed strategies and targeted interventions in the future.

CONCLUSION

This study was set out to assess the effectiveness of community engagement in solid waste management at the household level particularly focusing on the case of Chelstone Township in Lusaka The research scrutinized the community's role, level of engagement, participation in decision-making, awareness, attitudes, challenges faced, and the impact of community involvement in solid waste management. The findings revealed a partial effectiveness in community engagement, with limited household inclusion in solid waste management in Chelstone Township. Community participation primarily occurred through councilors, limiting genuine engagement. Although community-based enterprises (CBEs) existed, they often overlooked household participation in planning. However, community members contributed significantly to waste management by packaging waste and paying collection fees, although payment cooperation varied.

The study identified negative factors affecting community engagement, including the politicization of solid waste management through ward development committees, insufficient community knowledge, inconvenient waste collection points, unreliable secondary waste collection, Lusaka City Council's reluctance, and lack of transparency in fund utilization. Suggestions from respondents emphasized the need for education campaigns, effective stakeholder engagement, full integration of the community in decision-making and execution, transparent fund management, and timely waste collection. These recommendations highlighted the necessity for heightened awareness, inclusive planning, transparent financial practices, and efficient waste collection to enhance community engagement and achieve effective solid waste management at the household level.

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