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RESEARCH ARTICLE



Local Market Institutions and Solid Waste Management in Accra's Open-Air Markets

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ABSTRACT

Solid waste management is a global concern that has been handled in several ways in different parts of the world. In cities of the Global North, measures meant to prevent or minimise solid waste generation and its associated challenges are based on the waste management hierarchy, whereas in cities in the Global South, the active involvement of the public and private sectors is well documented. Existing studies cover practices of solid waste collection, reuse, recycling and landfilling by private formal and private informal actors. The term informal actors has often been used to refer to itinerant waste buyers, waste pickers and recyclers. Local African institutions existing in marketplaces – such as women known as ‘market queens’ or ‘commodity queens’ and market chairmen, whose management roles are not necessarily geared towards livelihood creation – have, however, been neglected. This lack of attention to the roles of local institutions in solid waste management potentially undermines efforts aimed at waste minimisation and the achievement of policy measures such as the 2030 Agenda for Sustainable Development (Sustainable Development Goal 11) that seeks to make cities inclusive, safe, resilient and sustainable. Hence, based on the cases of the Kaneshie, Kantamanto and Madina markets in Accra, empirical evidence of the role that local market institutions play in solid waste management is provided. Based on this, an argument is made for removing structural barriers impeding local market institutions’ participation in existing systems for managing urban market environments.

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Accra; local institutions; market queens and chairmen; open-air markets; solid waste management

Solid waste management (SWM) in open-air markets (OAMs) in the global South, compared with the indoor and formally regulated markets in the global North, often face formidable challenges. In Ghana, Raymond Asomani-Boateng (2015) identified the Kejetia and Asafo markets in Kumasi; the Kantamanto, Madina, Malata, Makola and Kaneshie markets in Accra; and the Takoradi Market Circle in Takoradi as examples of OAMs that have enormous solid waste challenges. Garth Myers (2005) attributes such SWM challenges to population growth, urban poverty and chronic crises in the provision of SWM services. Anne Scheinberg, Ljiljana Rodic-Wiersma and David Wilson (2010) associate the troubles with infrastructural deficiencies and inferior SWM vehicles and equipment provided by donors and for which spare parts and servicing facilities are unavailable

locally. The problems are, according to Romeela Mohee and Thokozani Simelane (2015), exacerbated by indiscriminate dumping and negligence of SWM which are also detrimental to public health. Consequently, several recommendations for improving SWM situations have been put forward.

One of the approaches is a revised SWM hierarchy which was initially established as a principle in the first EU Waste Framework Directive (WFD) 75/442/EEC; and as opposed to the conventional SWM approach which places solid waste disposal at the top of the pyramid and relegates prevention to a position of last option (Lazarevic, Buclet & Brandt 2010). The revised SWM hierarchy is represented by an inverted pyramid as an expression of genuine concern for promoting SWM measures that divert waste from landfills. The revision categorises SWM strategies into five tiers headed by source prevention while disposal (incineration or sanitary landfill with adequate monitoring) is at the bottom. In the middle of the pyramid are notions promoting waste as a resource in a circular economy where materials are constantly recycled for recovery and reuse purposes according to the polluter-pays principle.

Waste prevention, also known as source prevention, is described in the waste hierarchy as measures taken before a substance or material has become waste. It is from this notion that the zero-waste approach was adopted in high-income countries like Australia, the United States of America, New Zealand and Sweden, as one principle underlying the solving of waste problems (Palmer 2004). Prevention entails two main recommendations, namely either reduce the solid waste generated by a system or achieve zero waste. Since it is unclear which prevention requirement is paramount for a country, the framework is criticised for failing to introduce binding quantified targets for waste prevention (Lazarevic et al. 2010). This inevitably gives liberties to countries, especially those in the global North, to generate more solid waste because they can meet recycling targets. Despite this, the principle of reuse, recycle and recovery (the 3R's) has been widely adopted in light of globalised policies such as the United Nations' Sustainable Cities agenda and public-private partnership (PPP) systems. PPP, according to Met al Massoud and Mutasem El-Fadel (2002), is the transfer and control of a good or a service which is provided by the public sector, either in whole or in part, to the private operators. The next section delves into the nature of PPPs in African cities like Accra.

Public and private sector involvement in solid waste management

Although the waste hierarchy is a useful tool for sustainable SWM (Price & Joseph 2000), scholars have claimed that such a cross-regional implementation of SWM measures has limited scope and may be unrealistic for African cities (Grant & Oteng-Ababio 2021; Mohee & Simelane 2015; Pieterse 2004; Schindler 2017). For instance, in many African cities, pure formality in which formal firms engage other formal firms for SWM services is atypical due to the co-existence of public, private formal and informal actors (Grant & Oteng-Ababio 2021).

Municipal or city authorities at the national, regional and local levels typically represent the public sector, whereas the private sector is represented by privately owned enterprises. As recounted by Mesfin Tilaye and Meine van Dijk (2014) in the case of Ethiopia, privatisation of SWM services is based on the principle of public ownership of SWM assets with only the operational responsibility being given to the private sector.

Conversely, in instances where there is full privatisation, studies have shown that government transfers ownership, risk and control of SWM asserts to the private sector for them to receive payment of SWM fees directly from residents, as in the case of Kigali in Rwanda (Van Niekerk & Wegmann 2019). In Ghana, privatisation operates through government subsidies (Oduro-Kwarteng & Van Dijk 2013).

Nevertheless, PPPs are often preferred compared to full privatisation because there is a substantial extent of risk-sharing between the public and private sectors (Oduro-Kwarteng & Van Dijk 2013). While some have lauded PPP policies as the best option for managing African urban environments (Ahmed & Ali 2004; Post, Broekema & Obirih-Opareh 2003); others have criticised its efficiency (in terms of cost reduction) and effectiveness (in terms of quality service delivery) (Oduro-Appiah, Afful, Kotey & De Vries 2019; Oduro-Kwarteng & Van Dijk 2013; Myers 2005). Despite their advantages, the process of PPPs in many African countries has been complex and bedevilled by numerous constraints.

The existing literature portrays the private sector to be facing similar problems as the public sector like financial challenges, limited human capital, inadequate equipment, laborious procurement procedures, rigid working schedules, constraints on management changes, poor supervision and corruption (Awortwi 2004; Spoann, Fujiwara, Seng, Lay & Yim 2019). As a result, many have argued for the integration of the private formal and informal sectors due to their immense contribution (Grant & Oteng-Ababio 2021; Oduro-Appiah et al. 2019; Oteng-Ababio, Owusu-Sekyere & Amoah 2017). These private informal SWM actors (PiFAs) are seen as the indigenous, unregulated and unregistered activities of individuals concerning waste collection, disposal and recycling (Oteng-Ababio 2012). In Accra, for instance, studies have shown that informal actors collect (1 313 tonnes) more than municipal/public actors (137 tonnes) and nearly as much collection as formal actors (1 486 tonnes) (Oduro-Appiah, Scheinberg, Afful & De Vries 2020).

Even though informal SWM actors are recognised as an integral part of Southern urbanism, several factors determine their level of participation in PPP systems. For instance, in the Philippines, Brazil, Colombia and Peru, studies have shown that PiFAs cannot operate legally in the SWM sector without the approval of or licence from the municipality (Aparcana 2017; Gupta 2012; see Sheburah Essien & Spocter 2022 for a similar case in Ghana). In South Africa, operators in the informal waste sector are reported to be hired by municipal waste management contractors as a means of securing the livelihoods of the participants and making the urban SWM sector a pro-poor PPP (Scheinberg, Rodic-Wiersma & Wilson 2010). In Nigeria, Olugbenga Adebola (2006) found that neighbourhoods determine the type of private sector involvement in the collection, transportation and final disposal of waste. Private formal SWM actors (PFAs) operate in high-income and low-density residential areas, whereas PiFAs operate in low-income and high-density residential areas (Adebola 2006).

This confirms that the fate of private (formal and informal) sector involvement is determined by local relationships and the interests of ordinary people. In some markets in Ghana, the local market institutions determine how solid waste should be managed (Asomani-Boateng 2015). Such dynamism in the choice of SWM system elucidates the complex geopolitical factors that shape SWM practices in African cities. As shall be presented in this paper, the different governance approaches of local market institutions in the case-studied OAMs yielded various approaches to SWM and hence the study's argument for the inclusion of these institutions in existing systems for managing urban market environments.

Data and methods

This study explores the contribution that local market institutions make to address SWM issues in urban market environments. To this end, data was derived from semi-structured questionnaire survey with 345 traders and 46 structured interviews with public formal SWM actors (PuFAs), PFAs, PiFAs, women known as 'market queens' or 'commodity queens' who are market or commodity leaders, and their male counterparts, known as 'chairmen', in three OAMs in Accra namely, the Kantamanto, Kaneshie and Madina OAMs. In each of these markets there were 115 traders who were randomly selected while 10 market leaders were sampled using the snowballing technique. The purposive and snowballing techniques were additionally useful in recruiting participants from the public, private formal and informal sectors connected to the case-studied OAMs to share their experiences of local market institutions. Thereafter, themes and codes were used to analyse the qualitative aspect of the data for this article.

The Kantamanto market, which is physically located at the core of Accra's central business district (CBD), is deemed Ghana's largest second-hand clothing market. Local legend has it that the name Kantamanto was conferred on the market in the 1960s by Ghana's first president, Osagyefo Dr Kwame Nkrumah, suggesting in the Ghanaian language Akan that, '*Oka* [speak]-*Ntam aa* [swear] – *Onto* [does not go against]', which literally means 'he who vows does not go against his word'. The Kantamanto market houses more than 40 000 traders of which 40 percent are women (Oteng-Ababio, Sarfo & Owusu-Sekyere 2015). This largely explains the dominance of market chairmen in their local market governance system as the ratio of men to women trading in the market is 3:2. The traders engage in the sale of all kinds of wares from used clothing to used footwear, food, leather products and electronic spare parts. There are three categories of second-hand clothing traders, namely retailers with stalls, importers and 'hawkers.' As in the cases of the Madina and Kaneshie OAMs, the main market days are Wednesdays and Saturdays. [Figure 1](#) shows how traders and second-hand clothing buyers busily select the best items from piles of second-hand clothing on the ground, a practice commonly referred to as 'bend down boutique' in the Ghanaian local language because a buyer has to bend down to select the best second-hand clothing items.

The Kaneshie market, which is deemed as one of the biggest markets in West Africa (Enu 2014), is located at the edge of Accra's CBD. The name Kaneshie in Ga¹ dialect means 'under the lamp', symbolising its beginnings as a night market. Kaneshie market now comprises a large OAM, a market complex and a lorry park. As a result, there is usually heavy vehicular traffic throughout the day, especially around the market (see [Figure 2](#)). The market complex is furnished with about 2 499 stalls, a clinic, banking and sanitary facilities. The ground floor houses 1 269 stalls designed for the sale of food and agricultural products while the 534 stalls on the first floor are for items such as provisions, household wares (for example, utensils and rubber products) and the 696 stalls on the second floor are devoted to clothing and fabrics. The activities of over 1 000 traders within the entire market usually leads to the generation each day of large quantities of solid waste at the sanitary site located in front of the market complex.

Madina market, on the other hand, is located farther away from the CBD on the north-eastern side of the city. On market days the market is generally busy with heavy vehicular traffic and vendor trading activities in the streets, pavements and roadsides. The continual



Figure 1. The 'bend down boutiques' of the Kantamanto market. Source: Authors' fieldwork

removal of the vendors from the market peripheries has led to the creation of an entirely new (Madina) market called Bohy³ International Market (formally recognised as Reddco market),³ a subsidiary market for street vendors. The name expresses traders' confidence in the promising nature of the market to gain local and international recognition. The commodities traded in the main market include perishables such as fruits and vegetables and non-perishables such as plastic products, livestock and second-hand clothing, as well as all kinds of manufactured goods produced globally (for example, cloth, utensils). In contrast, the commodities traded in the new market are mainly perishables. Administratively, whereas the Madina market is located in and managed by the La Nkwantang-Madina Municipal Assembly, the Kaneshie and Kantamanto markets are located in and managed by the Accra Metropolitan Assembly under the Okaikoi South and Ashiedu Keteke Sub-Metro Districts. The sections that follow discuss the gap-filling roles of local market institutions and its implications for rethinking globalised perspectives on SWM.

Local market institutions and organisation of the marketplace

Local institutions, in the context of OAMs in Ghana, are often referred to as market stakeholders because these are people who share legitimate interests or stakes in the (solid waste) management of markets. They could be either formal or informal actors who often operate on a local level. Hence, in this paper local (market) institutions refer to those social structures that are manifested in traditional governance systems, norms



Figure 2. Layout of the Kaneshie market showing heavy traffic on the peripheries and open-air market activities around the market's core complex. Source: Authors' fieldwork

and cultural practices, social capital and networks that enable the institutions to organise and represent workers active in marketplaces (Hendriks 2017; Yaro, Teye & Bawakyillenuo 2015). Prominent examples of such local institutions that exist in most markets in Ghana are market and commodity queens and/or chairmen.

Market queens and/or market chairmen govern an entire market, specifically, groups of traders, commodity associations and commodity or item leaders. On the other hand, commodity queens and chairmen are persons who govern only commodity associations such as the yam, tomato, cassava or hardware traders' associations. The titles chairmen or queens symbolise power and authority and further confirm the marketplace as a site of gendered differentiation (Hendriks 2017; Overå 2007). In the Madina and Kaneshie OAMs for instance, the women-dominated nature of the marketplace resulted in the use market queens and commodity queens. By contrast, in the Kantamanto market, popular terms such as market and commodity chairmen or chairman are used to signify a marketplace dominated by men. Such gender differentiation has over the years been ascribed to the economic and political effects of structural adjustment programmes (SAPs) in the form of rising unemployment and underemployment of men due to the freezing of public sector employment (Owusu & Lund 2004). An effect of SAPs was to push men and women into gendered spaces, for example, men into used clothing ventures as evident in the Kantamanto OAM and women into foodstuffs

activities as evident in the Madina and Kaneshie OAMs. The relationship between city authorities and local market institutions (hereafter market leaders) in the surveyed markets is described as indispensable by a public actor at the La Nkwantang-Madina Municipal Assembly:

you cannot work in an assembly without market queens. Market queens are the stakeholders of the assembly. Before the assembly takes any decision, they call all the stakeholders within the market to be informed. That is it! So, you cannot do any effective work within the market without the market queens.

These markets have an established system of governance for market dwellers. A market dweller is a person occupying market space for various economic and socio-political reasons. The market dwellers may include traders, head porters⁴ (mostly migrants), truck pushers carrying loads on trolleys and carts, street children, market cleaners, waste pickers, kayaborla⁵, drivers market leaders and administrative staff. The market leaders and the waste reclaimers contribute significantly to ensuring conducive urban market environments. Studies have highlighted the crucial roles that such local market institutions play in UMEM (Asomani-Boateng 2015; Hendriks 2017; Sheburah Essien 2021). As exemplified in the above quotation, city authorities discharge their responsibilities in conjunction with market queens and chairmen, including those in privatised market settings (as in the case of the Kaneshie market), although city authorities exercise oversight responsibility over OAMs generally. Figure 3 shows the complex internal structures for governing the selected OAMs in Accra.

As illustrated in Figure 3, the internal governance system of the OAMs mainly comprises of a superstructure and substructure. The superstructure which oversees the affairs of the entire traders in the market is made up of market associations and its executives (for example, market organiser, secretary, financial secretary, and treasurer) headed by a market queen or chairman. These market associations also comprise representatives from commodity group associations such as the yam, tomatoes, cassava and fruit sellers' associations. On the other hand, the substructures are made up of commodity group associations and their executives who are headed by a commodity queen or chairman. Other positions are market communications officer and accountant (in Kantamanto market) and market spokesperson (as in the case of the Kantamanto and Madina OAMs).

In the Kaneshie and Madina OAMs, there is no fixed tenure of office for market or commodity queens nor chairmen and executives. A position becomes vacant once the incumbent dies, resigns or misconducts himself or herself. After the death of an incumbent, a new leader is elected to office. Whereas in the case of Kantamanto, elections are conducted for market and commodity chairmen and their management team every four years. Incumbents can seek re-election or be re-elected for as many tenures as desired. The administrative differences between the surveyed markets suggest that OAMs set their own rules. One market secretary remarked:

Here in Kantamanto [market], we vote to elect our leaders so it came a time when elections were due, and nobody was willing to contest me so I went unopposed and when they voted then I won as secretary. So here we vote. Am in my fourth year as the secretary.

In the Kantamanto market, market/commodity chairmen could serve as many as six tenures in office. One market overseer recounted: 'I held the position of a market CD

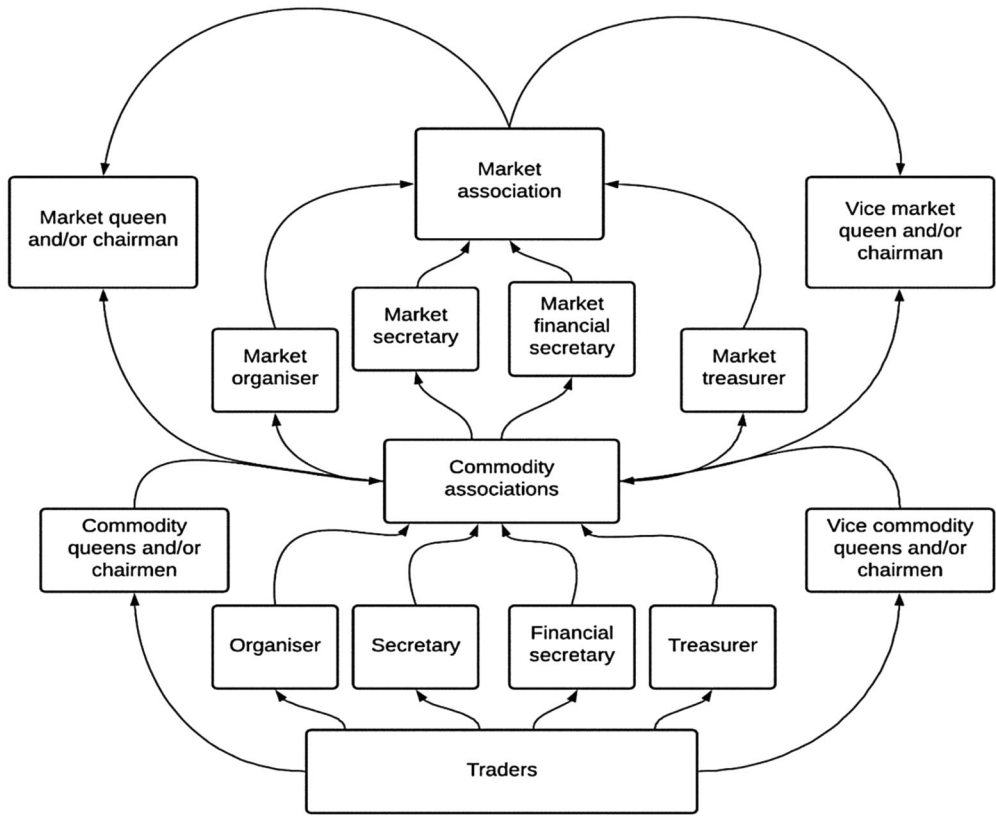


Figure 3. Market governance structure. Source: Authors' construct

[Communications Director] from 1996 until now. It's been 24 years because I started working in the Kantamanto market in 1986 [as a trader]'. If the newly elected officer is not considered to have adequate competence to represent the group, traders may call for a re-election. The vice-market and commodity chairman, secretary, financial secretary, treasurer and organiser (that is, the executives) are nominated by the market and commodity chairmen and votes are cast by the rest of the traders. All office-bearers have specific roles to play.

For instance, a vice-market chairman or a vice-commodity chairman has the responsibility of assisting the market chairman or the commodity chairman in managing the market and commodity associations, respectively. The market and commodity secretaries take records of traders' activities and minutes of proceedings and discussions at association meetings whereas the market and commodity financial secretaries manage the financial contributions of traders and keep records of all expenditures in collaboration with the market or commodity treasurers. Organisers have the responsibility of organising association meetings and programmes such as clean-up exercises, weddings and funerals. In the Kaneshie market the various heads help with members' coordination and maintain their welfare by informing the market management (that is, Accra Markets Limited) about members' needs, suggestions and grievances. Market queens and chairmen are elected based on personal qualities such as trading experience, knowledge of market affairs,

character, ability to lead and educational qualifications. In the words of a 55-year-old market secretary in the Kaneshie market, the requisite characteristics of a market queen or chairman are:

Have been in the market for a long time. Someone has a store or a stall, who is trading or selling with good calibre. Is like selecting someone for candidacy for a chief. Usually, we consider someone with good conduct of behaviour, someone who commands respect, someone who is legible [sic], who knows how to talk, who is brave and wise to rule because, excuse me, traders are a bit rough. So, we elect someone who has been in the market, knows the rules and regulations before.

The behaviour of traders demands that a market queen or chairman is someone who commands respect from traders to strengthen market norms and values. A market queen or chairman should also be an embodiment of hard work and wealth. A 64-year-old market chairman at the Kantamanto market concurred: *'I am the chairman. They see me to be very hardworking because I have built seven to eight huge structures. So, they saw something good in me. That is why they gave me the position'*. In situations where a chief or royal family resides in the area where the market is located (as in the case of the Kaneshie market), the market queen or chairman has to be introduced to the chief who must approve the choice. Lilli Scheiterle and Regina Birner (2018) find that the chief of the town can appoint market queens in acknowledgement that several market-places have been carved out of the areas of jurisdiction of traditional authorities.

Similarly, Abedi Asante and Ilse Helbrecht (2020) find that the internal local market institutions in Accra are headed by the community chief (*ohene*) and the queen mother (*ohemaa*) because they are the supreme traditional leaders for every area where markets are located. Depending on the ethnic jurisdiction within which the market is physically located, ethnicity may become a vital criterion for electing a market queen or chairman, unless the market and its jurisdiction are cosmopolitan in nature as in the case of the Kantamanto market. In the Kantamanto market for example, even though the marketplace traditionally belongs to the Ga-Adangbe ethnic group, the market chairmen over the years have hailed from the Ashanti ethnic group. On the contrary, ethnicity and formal education do not necessarily play major roles in the selection of commodity queens and chairmen because commodity associations are often assisted by literate individuals such as commodity secretaries, financial secretaries and treasurers.

Differences and similarities in market governance structures

Differences in local market institutional structure was observed among the surveyed OAMs. In particular, the governance structure in the Kantamanto OAM slightly differed from those in the other two markets. A market leader at the Kantamanto OAM shed further light on this:

When we say Kantamanto market it is one, we have one mother association, that is railway line joint association. So, we have second-hand clothing chairman and leaders. And we also have footwear leaders. And we also have hardware leaders. But all of us, our head is the KRLJA. We have one senior chairman that oversees this market. When we meet at the hardware area the chairman of the second-hand clothing association is the vice there [KRLJA] and the hardware chairman is also the chairman for the whole land (market leader, 59 years, 25 years trading experience).

Thus, the social structure of the Kantamanto market, although seen as one under the Kantamanto Rail-Line Joint Association (KRLJA), has various commodity group associations, namely Kantamanto Used Clothes Sellers Association (KUCSA), Kantamanto Used Footwears Sellers Association (KUFSA), Kantamanto Hardware Sellers Association (KHSA) and the second-hand clothing dealers' association. The second-hand clothing dealers' association, although located in Kantamanto, is autonomous from the KRLJA. As such, the second-hand clothing dealers' association is excluded from the structure of affairs in the core Kantamanto market. Each of the remaining three associations under KRLJA is also headed by a chairman, vice-chairman, financial secretary, organisers, secretary and treasurer. The above quotation confirms that commodity leaders may double as leaders in the market association, KRLJA. It is within this social structure in Kantamanto that the market chairman and executives of the KRLJA act as the overlord of the traders, commodity associations and leaders, a role similar to that of a market queen in the Kaneshie and Madina markets. However, unlike in the Kaneshie and Madina markets where SWM decision-making power is centralised in the hands of Accra Market Limited and public actors, decision-making power is distributed among commodity leaders in the Kantamanto market. The KRLJA meets only on issues of common interest to all traders, such as a fire outbreak. Yet, commodity leaders in the Kantamanto market independently steer the SWM affairs of the market dwellers and their spatial practices within the jurisdiction in which they operate. A 62-year-old market actor in the Kantamanto market revealed how they derive legitimacy to manage their own space:

As for the authority and power they have voted for us. The authority has been vested in us to oversee the market. But in terms of laws such as anyone who does not pay and subsequent closure or bracing of your shed or shop, it was the leadership who brought that idea and when we went for meeting that is general meeting so that here will be neat.

As shall be discussed in the next section, the different governance approaches of the commodity chairmen and leaders observed in the OAM contributed to various SWM spatial practices in Kantamanto. For instance, whereas the second-hand clothing dealers' association, KUFSA and KUCSA practised pay-as-you-generate (PAYG) system of SWM, KHSA practised pay-as-you-dump (PAYD) system of SWM. It was also found in all markets that the level of participation of market and/or commodity queens and chairmen impacted either positively or negatively on how solid waste is handled and where it is disposed of. Although a significant proportion of local assemblies' internally generated revenue comes from markets (Owusu & Lund 2004), investments in SWM in the studied marketplaces were limited.

Local market institutions and variations in solid waste management practices

Several actors shared SWM responsibility in the marketplace. These actors ranged from private informal SWM actors (PiFAs), private formal SWM actors (PFAs), public formal (or municipal) SWM actors (PuFAs), informal reclaimers, market cleaners, stationary waste collectors and/or buyers. In the Madina OAMs (both new and old markets), the prevalent actors were PFAs and PiFAs, in the form of tricycle operators locally referred to as *aboboyaa*, *kayaborla*, informal reclaimers, whereas the work of market cleaners

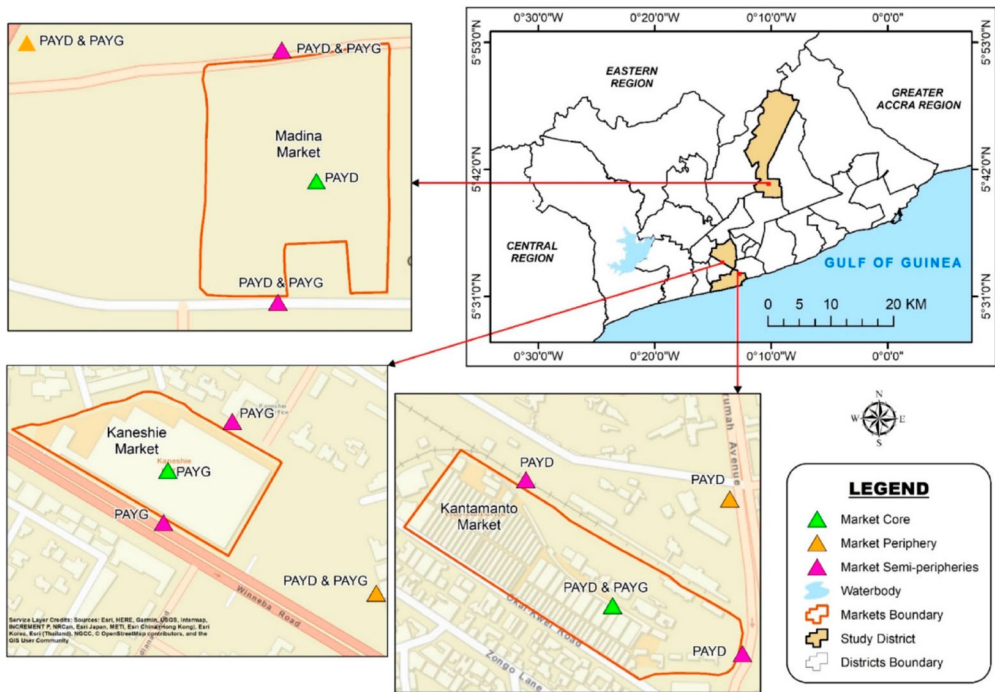


Figure 4. Maps illustrating the different solid waste management systems of selected open-air markets in Accra. Source: Authors' compilation

was significant in the Kantamanto and Kaneshie OAMs. The informal actors in the Madina market had direct relationships with traders in the process of removing solid waste from individual stalls or shops under the PAYD system. This practice of PAYD meant that no fixed cost was applied for solid waste collection services as cost depended on the nature, quantity and density of solid waste generated for disposal, as well as the client's bargaining abilities.

In the Madina market, PFAs are operated at an individual retailer and at market levels. At the individual retailer level, PFAs (for example, Zoomlion Limited) operated two concurrent systems of solid waste collection services, namely, direct removal from stalls or shops and self-dumping from stalls or shops at PFAs' centralised collection points within the market. Part of the former arrangement occurs at the peripheries of the market (that is, mainly along roadsides) according to the principles of PAYG (where monthly charges are applicable). The latter arrangement (mainly at the core) operates in keeping with the principle of PAYD (see Figure 4). Under the PAYG arrangement, the frequency of solid waste removal depended on the nature of the contract (for example, weekly or daily removal), the nature of the solid waste (for example, organic, inorganic or general waste) and the generation rate. A 44-year-old private formal SWM actor in the Madina market explained:

If you subscribe to once a week [collection services], that means your rate will be different from somebody who wants once a day. And it will be based on your generation rate and your type of waste you produce. There are some people they generate only paper, for example, printing press. You see, paper doesn't get bad so they can be packing it till the pick-up day.

In contrast, PAYG in the core of the Kaneshie and Kantamanto OAMs was arranged by market or commodity queens and chairmen and private market owners at group levels. This is because market and commodity queens and chairmen in the Kaneshie and Kantamanto markets had a significant influence on market dwellers' SWM practices compared to their counterparts in the Madina market. The diagram in [Figure 4](#) shows two neoliberally induced SWM systems in different market jurisdictions within the case studied OAMs.

[Figure 4](#) provides evidence of the PAYG system in the core of the Kaneshie and Kantamanto OAMs, whereas PAYG in the Madina market occurred at the peripheral and semi-peripheral areas. Market core refers to densely clustered areas under the dominance of market and commodity queens or chairmen. In contradistinction, market peripheral and semi-peripheral areas represent less densely clustered areas around market core areas where the dominance of the aforementioned local institutions is diminished or even absent. A mixture of PAYG and PAYD systems of SWM was evident at the peripheries and semi-peripheries of the Kaneshie and Madina markets (see [Figure 4](#)). The PAYG system of SWM developed in the peripheries of the Kaneshie market under PIFAs arrangements with PuFAs. This is because SWM fees are included in market tolls collected by city authorities within the market's peripheries. Unlike these two OAMs, a mixture of PAYG and PAYD was evident in the core of the Kantamanto market due to the autonomous structures of the local market institutions. One market overseer reported why the SWM practices of Kantamanto Hardware Sellers Association (KHSA) were transformed from PAYD to PAYG and then back to PAYD.

At first, when you generate your garbage then you give it to kayaborla but we realised that, the kayaborlas are 'not mentally sound' people. They will pick someone's garbage and leave it at another person's location. On the basis of this situation, we decided that then we will all collaborate and levy Ghc3 [0.3 USD] from everybody to clear our garbage. We tried it for five to six years till AMA [Accra Metropolitan Assembly] introduced contractor's [PFAs] involvement. The contractor had [vehicular] problems and about one month the contractor's car was unable to come and clear the garbage and we were also seated in the filth. So, we ourselves adopted a strategy, decided that henceforth we will not take their [traders] monies again. We made it that the borla taxi will park in front of the entrance and the operators of these borla taxis will enter [the market] and will be announcing their presence.

The above quote encapsulates the proactive nature of local institutions in the Kantamanto market as to how they negotiated their way over obstacles relating to SWM. The SWM challenge has meant that market dwellers must transition between certain SWM practices. According to the quotation, the transition from PAYD to PAYG to PAYD was occasioned by the unacceptable disposal practices of *kayaborla* inside and outside market domains (i.e., from PAYD to PAYG) as well as the unreliable solid waste removal attitude of PFAs (i.e., from PAYG to PAYD). Although other economic factors are equally decisive in transitioning, one can infer from the quotation that the market leader had an autonomous mandate to decide and choose appropriate SWM practices for traders.

In contrast, the market institution in the Kaneshie market had a semi-autonomous mandate to oversee market environmental and trading activities because the Kaneshie market is privatised under the management of Accra Markets Limited. Due to the autonomous nature of local market institutions in the Kantamanto OAM, an ambiguous relationship between the Kantamanto Rail-Line Joint Traders Association (KRLJTA) and city authorities, particularly the Accra Metropolitan Assembly (AMA), was evident from

the several interviews with the market leaders. For instance, a 55-year-old market overseer emphasised: 'AMA has taken it that all waste management issues in Kantamanto market are not their issue'. A 64-year-old market leader expressed his feelings regarding the Kantamanto market's relationship with the municipal authorities as:

Here [market core] we have the original footwear sellers. Those there are squatters! They are squatters because the original footwear sellers are here. It is AMA that has permitted those squatters to be there. AMA takes money from them [squatters] and must take care of the garbage issues there.

The above sentiments of the Kantamanto market leaders were later affirmed by a 46-year-old PuFA:

Kantamanto, they have an association. So, they have employed their own workers within the market. So, we don't go inside there and do the sweeping and all that, they have their men who do everything and then they bring the trash into our truck and then we dispose of it.

Consequently, the leaders of KRLJTA govern traders within the core of the Kantamanto market by their own rules and regulations, while the PuFAs govern the so-called squatters, hawkers and vendors on the semi-peripheries and peripheries of the market under the PAYD system. The power of local institutions in the Kantamanto market is further demonstrated in their choice of SWM practices, the inclusion of SWM levies in market tolls (as in the case of KUCSA and KUFSA) and in the innovative ways they addressed and engaged with the AMA on SWM issues. But in the Kaneshie market, the SWM spatial practices differed significantly according to their institutional arrangements. Whereas local market institutions (including Accra Markets Limited) governed the activities of traders and squatters at the core and semi-peripheries of the market, PuFAs (that is, the Accra Metropolitan Assembly) governed the activities of traders and vendors at the peripheries of the market. As such, traders and squatters under local market institutions had the sole privilege of either dumping solid waste in front of their stalls for market cleaners to remove or to self-dump at the central waste receptacle site at no charge. The reason was that the traders paid either a daily or a monthly market toll to the Accra Markets Limited. In contrast, the traders on the market's peripheries, who are under the direct management of PuFAs, dumped solid waste from their stalls with PiFAs hired by PuFA because they pay daily market tolls to the Accra Metropolitan Assembly (AMA).

Under these arrangements, the traders and vendors who are non-adherent to market leaders often struggled with, if not being denied, the right to use central waste receptacles provided by the Accra Markets Limited. The non-adherents sometimes had to employ *kayaborla* or errand guys to dump their waste on their behalf or give a tip to security personnel at the central waste receptacle site before being allowed to dump solid waste. These struggles often resulted in fierce contestations. Such contestations about and negotiations for access to dumping space make a perspective of appropriation of space relevant. Appropriation of space means that the market (that is, physical) space is commodified to serve the needs and interests of the dominant group (that is, local market institutions and their adherents). Hence, in the Kaneshie and Kantamanto OAMs, the unwritten rules and regulations instituted by local market institutions were used to connect to the market's metabolic system, as Seth Schindler (2017) rightly observes. These informal measures were deemed powerful enough to ensure that

traders abide by the appropriate solid waste disposal habits. A 59-year-old market secretary in the Kantamanto market pointed out some of the unwritten rules under the PAYG system of waste removal:

If we observe that you owe a lot, then we will take taskforce to brace [lock] your shop. When we brace your shop and you come to the office, we will let you pay all your outstanding [fees] before we unlock your shop.

In the Kaneshie market a trader can be suspended or fined for not abiding by the rules and regulations instituted by market and commodity queens. A 55-year-old market secretary eloquently described the disciplinary structures of the Kaneshie market:

Within the association, we've got the disciplinary committee. When they fight, we come and sit down and discuss it. If it happens that one should be suspended, then the other one should be [acquitted]. But if the two supposed to be suspended, they will go under suspension. At times some suspension could be three months, some could be two months, some could be one month. Some even a week, it depends on the gravity of the problem. If they are too little there is a fine for them to know that what they did is not good. So, we've got the rules and regulations. Very, very strict rules.

These quotations emphasise that the SWM activities in the Kantamanto and Kaneshie markets are controlled by local market institutions as opposed to the Madina market, where SWM decisions are controlled by the PuFAs (the La Nkwantang-Madina Municipal Assembly) and where the phenomenon of PAYD is prevalent. A 50-year-old commodity queen in the Madina market explained why market leaders in that market have limited influence over the SWM activities of traders:

In the beginning, it was not like that. The people have increased in the market. Now the market even starts from Zongo junction through to Ritz junction [neighbouring suburbs] and stretches to the top there. All those places are part of the market now. But because this place is the main [core] market if there is any issue, it is inside here that everybody would come. But the market now has extended far. So even we ourselves our voice does not travel far.

Thus, compared to the Kaneshie and Kantamanto OAMs, local institutions in Madina's main market are less powerful because the market has expanded in terms of space and population. The spatial expansion has resulted in the inclusion of more places as markets, which has subsequently made it difficult for the local market institution to control and manage affairs. Moreover, unlike in the Madina and Kaneshie OAMs where PAYG is practised under formal (public and private) arrangements, PAYG in the Kantamanto is practised under informal arrangements with market chairmen. A 68-year-old market chairman explained the nature of PAYG in Kantamanto:

The association of used clothing sellers and the footwear people, they collect GhC3 [3 cent] from their members to take care of their waste issues. But as for the hardware people they have an issue so traders manage their own waste. So, this time around we have employed people, thus women and they are almost about ten people who sweep. And we also have those who come with the truck to come and clear the garbage.

The provincial market structures implied in this quotation have contributed to the significant variations in spatial practices of SWM. Thus, whereas traders belonging to the Kantamanto Used Clothes Sellers Association (KUCSA), and the Kantamanto Used Footwears Sellers Association (KUFSA) groups practised PAYG, traders belonging to the

Kantamanto Hardware Sellers Association (KHSA) removed their waste under PAYD arrangements. It is fair to assert that traders under the Kantamanto Rail-Line Joint Association had particular ways of removing solid waste from their stalls or shops due to the nature of the systems that market leaders had put in place. Nokukhanya Cele and Robyn Pharoah (2021) find a similar connection between the disposal behaviour of dwellers in Kayamandi, South Africa and the practices and prevailing norms of the place. Similarly, Asomani-Boateng (2015) identified a connection between local market institutions and composting behaviour of market dwellers. Regarding the above excerpt, PAYG is practised among members of KUCSA and KUFSA because their market leaders have incorporated SWM fees in their market tolls. In turn, the leaders employed market cleaners to remove solid waste from adherents' doorsteps. This help to explain why the Kantamanto market recorded a high response regarding the use of market cleaners. A 35-year-old hardware trader shed light on why traders have experienced different SWM approaches over time:

At first, we used to pay monies to the leaders for them to get us cleaners. But they misused the monies, and we didn't know what happened and all of a sudden, the garbage started to pile up again. People started talking and we stopped paying the borla [garbage] fees. Besides, the amount they were charging was higher than the rest of the associations. We now only pay for security.

From this trader's perspective, financial misappropriations by KHSA leaders contributed to his choice for PAYD. The financial mismanagement therefore created a system where traders of KHSA resorted to working with PiFAs, particularly *kayaborla* and *borla* taxi operators, to dispose of the solid waste from their stalls or shops. However, a 62-year-old market leader in the Kantamanto market refuted the claim about financial misappropriation with the explanation that PFAs was not reliable:

We used to work with contractors and in the evening that their cars are to come and clear the garbage there would be excuses such as a burst tyre, the engine is spoilt, etcetera. The waste could be there for about weeks. So, if it happens like that then traders feel that the monies have been embezzled.

The above excerpt implies that the change in SWM practices was triggered by technical causes such as the sudden breakdown of waste trucks and the unconcerned behaviour of the PFAs in finding a solution to the SWM problem. The citation also demonstrates economic reasons based on which traders attribute UMEM challenges to local market institutions. Hence, to deliver environmental protection and social well-being for the traders, local institutions embarked on a series of SWM negotiations with city authorities and the Accra Markets Limited (in the case of Kaneshie OAMs) for affordable SWM systems.

Conclusion

This paper has explored the various ways local market institutions organised and managed urban market environments as manifested in the Kaneshie, Madina and Kantamanto open-air markets. The exploration was based on interviews with market actors, traders, public actors, private formal and informal actors. Through the interactions with these market dwellers, the study shed light on diverse urban market environmental

management approaches useful for rethinking existing approaches to SWM. The SWM approaches in the surveyed markets comprised two neoliberally induced systems. They are the pay-as-you-dump (PAYD) and pay-as-you-generate (PAYG) systems under public and private formal or informal arrangements. Whereas PAYG was found to be prevalent in the Kaneshie and Kantamanto OAMs, PAYD was common in the Madina OAM.

Contrary to the case of the Kaneshie and Kantamanto markets where the practice of PAYG was predominantly operated at market levels under the supervision of local market institutions, PAYG in the Madina market was mainly carried out at the individual level by private formal SWM actors. The existence of market-level SWM practices (for example, the Kaneshie and Kantamanto OAMs) also had the potential to determine SWM practices at the level of individual retailers. As such, this paper's findings contribute to those of existing analytical studies that aimed to promote local (market) institutions as active agents of urban (market) environmental management, since market actors were found to influence spatial practices of SWM (Korbéogo 2020; Lund 2006; Simelane & Sihlongonyane 2021). For instance, in the Kantamanto OAM, traders governed by the Kantamanto Used Clothing Sellers Associations and the Kantamanto Used Footwear Sellers Association actors practised PAYG, whereas traders under the Kantamanto Hardware Sellers Association actors removed their waste under PAYD arrangements.

The results of the study not only demonstrate the contributions of local African institutions (such as market and commodity queens or chairmen) in ensuring good urban market environment but also how complex, dynamic and socio-spatially uneven SWM practices are in reality due to market institutional, economic and geopolitical factors. A significant issue is that local market institutions can negotiate, develop and/or adopt innovative strategies to make SWM in marketplaces adaptive to the local context. What is required is a recognition of the role that local market institutions play in UMEM and the subsequent removal of structural barriers impeding their participation in existing systems for managing SWM in Accra's OAMs.

Notes

1. An indigenous ethnic group in Accra.
2. Bohy3 means 'promise' in the local dialect.
3. Named after the Reddco residential apartment building adjacent to the market.
4. Head porters are market assistants, usually women, who carry loads on their heads. The term *kayayoo(yei)* is used in Ghana to describe such women head porters: *kayayoo* (singular) and *kayayei* (plural).
5. *Kayabola* literally means carriers of waste or waste collectors. It is from the concept of *kayayei* that *kayabola* is derived. Whereas waste pickers prefer recyclable materials, *kayabola* collect and dump all materials defined as waste.

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