

# **The operations and effectiveness of public and private provision of solid waste collection services in Kampala.**

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## **A b s t r a c t**

This paper compares the operations and discusses the effectiveness of public and private sector provision of solid waste collection in Kampala, Uganda. Household data suggest that the private sector is more effective than the public sector. Private sector companies provide services like container provision and providing timely and fixed collection time tables. Contrary to popular perception, fees charged by private companies are moderate. Public sector clients are charged fees even when the service is supposed to be free. Clients of private sector providers are more satisfied than those of public sector providers. It is however, revealed that while public sector serve mainly the low incomes, the private sector serves mainly the rich. In spite of these notable differences, clients of both public and private sector perceive the problem of solid waste management (SWM) in Kampala to be very serious. The effectiveness of public and private sector operations in solid waste collection in Kampala is hampered by corruption and lack of transparency. Given the situation of open competition for clients involving both public and private sector in Kampala, it is possible the public sector can operate effectively if they start commercial services officially like their private sector counterparts. This calls for a formal public-private partnership where the public and private sector can work together with the public sector dominating poor and marginalized areas while the private sector concentrates on rich neighborhoods

**Keywords:** Solid waste collection, Privatization, Effectiveness, Kampala, Uganda, Households

## **Introduction**

It is widely acknowledged that most cities in developing countries face challenges of poor solid waste management (SWM) resulting into major problems relating to public health and environmental pollution. Hardly a month passes without the press highlighting garbage complaints from city residents and reporting on heaps of uncontrolled garbage, roadsides littered with refuse, streams blocked with garbage leading to flooding and the presence of many illegal disposal sites (Matagi, 2001). The situation is made worse with rapid urbanization taking place and slums growing at an alarming rate.

In the 1980s, public sector monopoly of solid waste management (SWM) in urban cities was blamed for the mess citing inadequate financial resources and lack of management and technical skills. Public sector monopoly according to the World Bank also impedes the efficient allocation of resources and obstructs the functioning of markets (WDR, 2005).

Many analysts of urban environmental infrastructure in developing countries buoyed by the emergence of the new public management (NPM) model contended that without the discipline of competition, the public sector would not provide effective services. The public sector was criticized for being run under an old administrative model (the classical Weberian type of administration) that was characterized as slow, hierarchical, not cost-efficient, inflexible and not citizen oriented (Hood, 1991). This situation was further exacerbated by growing mistrust of the people in governments who were seen as mired in corruption (Doan, 1998). Dissatisfaction with the quality and reliability of services and the inefficiencies and even corruption of public sector operators made private sector participation attractive (Annez, 2006). The thinking was that privatization would not only solve failures of public ownership (Shirley & Walsh, 2001), but the public would benefit from the introduction of private sector management practices (Stren, 2001).

Many developing countries reshaped their urban systems and environmental infrastructure policies to reflect the new management thinking so as to implement elements of the NPM model.

Reforms implemented in most urban areas in Uganda in the 1990s were based on NPM principles, especially promoted by international donors such as the World Bank. The water and

sanitation reforms in Uganda gained momentum along the NPM lines. As early as the mid 1990s, the Uganda government recognized the limited capability and capacity of local authorities to provide adequate sanitation and solid waste management (SWM) to urban communities (Tukahirwa, Mol, & Oosterveer, 2010). The absence of sufficient funds for them to operate SWM services properly reinforced the argument for stronger private sector involvement. The desire to move in this direction was already spelled out in various policy documents including the influential World Bank sponsored urban environmental sanitation project (Mugagga, 2006). Privatization is a key component of reforms introduced in SWM in developing countries. In Kampala, in order to institutionalize private sector participation, the Kampala City Council (KCC) solid waste management Act was enacted in the year 2000. As a result, like in many other countries in the developing world, the public and private sector co-exist in SWM. However, despite the active involvement of both public and private sectors, major problems still remain as far as SWM is concerned. For instance only 40% of the garbage that is generated in Kampala is transported to the official dumpsite at Kiteezi (KCC, 2006). The purpose of this paper therefore, is to compare the operations of the public and private provision of solid waste collection in Kampala and discuss their effectiveness.

## **Methodology**

Solid waste management (SWM) in this study is meant to mean solid waste collection. When we refer to the private sector, we restrict ourselves to the analysis of the private firms that are formally registered and recognized by KCC.

To compare the operations of public and private provision of solid waste collection, data collection among clients of public sector (KCC) and private firms in Kampala was done through a quantitative survey carried out between January and May 2009 in the divisions of Kawempe and Nakawa. The questionnaire was administered to 475 respondents. Among the 475 respondents who responded to the questionnaire, 56% are served by KCC (12%) and the private sector (44%). The analysis is limited to these respondents.

The survey captured the socio-economic characteristics of respondents, frequency of solid waste collection, perceptions and satisfaction with present solid waste services, payment dynamics and services rendered by private and public sector.

Data collection took place through a structured, self-completion questionnaire to make sure respondents understood the questions and that no bias occurred in terms of illiteracy or education level. To ensure representativeness, a stratified random sampling strategy was followed, in which random sampling of respondents in the parishes selected involved targeting all income groups. If the sampled respondent was not available, not interested, or not part of the target group, the interviewer would move to the next random sampled respondent in that cluster. Given the difficulty of eliciting income and expenditure information, low income households were defined as those that reside in poor neighborhoods characterized by high population densities. Areas were classified as high income if they had low population densities and where neighborhoods are well planned.

Interviews with key participants like the KCC waste managers (10), managers of private firms (15), workers of both KCC (10) and private firms (15), the residents especially local council leaders (6) and opinion leaders (10) were conducted. The aim was to get explanations on the operations and effectiveness of public and private sector in SWM in Kampala.

The data through qualitative methods was transcribed and qualitatively analyzed. Survey data was analyzed descriptively where we derived frequencies and percentages. We used an independent sample t-test to check for the mean differences and to check whether or not there are significant differences in the scores.

## **Results and discussion**

Public and private sectors operations in SWM in Kampala For long, Kampala local government had the monopoly of being responsible for collection, storage and disposal of waste by statutory requirement. Communal containers (skips) were placed in specific locations for households to bring garbage at any time of the day especially in rich areas (Mugagga, 2006). However, an insufficient number of skips were placed in the city which created a situation that

encouraged open dumping in unauthorized places. Alternatively, households paid individuals (informal collectors) to transport garbage to the skip in which Kampala City Council (KCC) trucks would take to the official dumpsite. Informal collectors were needed because the distance to the skips was quite far and informal collectors would also dump in unauthorized places as long as no one was watching.

The strategic framework for reform (SFR) of 1997 however, proposed that SWM be privatized with private firms collecting refuse directly from beneficiaries at a fee, KCC subsidizing the low income areas in the short term and then later withdrawing completely (KCC, 2002; KCC, 2006). After formal privatization set in around the year 2000, communal containers were largely withdrawn. After the pilot refuse collection service was implemented in order to test the feasibility of contracting services in Makindye division in 2001, it was recommended to have skip-less refuse collection service in communities, with skips restricted to institutions and markets (KCC, 2002; Mugagga, 2006). As a result of the implementation of the policy, the most observable change in the SWM sector in Kampala is the increased involvement of the private sector.

Officially, 30 private companies are registered by Kampala City Council (KCC) to collect waste in any division of the city. Private companies collect garbage from private homes or institutions and are paid directly by these home-owners and institutions. Previously, KCC entered into formal contractual arrangements with private companies whereby the latter provided services for which they would be paid from local government sources through contracting. Firms like Nabugabo-Shauri Yako Joint Venture and Bisons Consult International were awarded contracts in 2001. KCC also awarded private companies a limited monopoly via competitive bidding in a defined area for a limited time (franchising). In this arrangement firms were allowed to charge residents, but KCC would pay a lump sum to private collectors to meet the costs of collecting garbage from poor households that cannot afford to pay. For example, in the central division of Kampala, garbage collection was taken over by Nabugabo Enterprises. In Kawempe division, NOREMA and Hilltop private companies were given contracts to manage the collection of solid waste. In Makindye division, Homeklin Ltd. was contracted. These arrangements were abandoned by KCC due to its lack of capacity to manage the contracting system and lack of

capacity and transparency on the part of private firms. As a result, Kampala city council didn't withdraw from collection of waste as planned. It is still involved in the collection and transportation of waste to the dumpsite. Records at Kiteezi dumping site in 2009 indicate that KCC is responsible for 87 thousand (about 27%) tons of garbage dumped compared to the private sector's 237 thousand tons (73%). By the time of carrying out this study, KCC operated alongside the private firms in many ways commercially providing solid waste services to Kampala residents. Private companies and KCC have widely scattered clients all over the city openly competing for customers.

#### Socio-economic and demographic characteristics of respondents

We asked for respondents of their educational status, the ownership of the house where they stay and the quantity of waste generated. We also classified their income category (see Table 1 below for details of percentage scores). It was discovered that the rich, not surprisingly perhaps, are served by mainly private firms while most of the low income households are served by KCC. There is a significant difference in the scores for KCC ( $M = 2.1$ ,  $SD = 0.7$ ) and private sector ( $M = 1.4$ ,  $SD = 0.5$ );  $t(8.5)$ ,  $P = 0.000$ .

KCC serves the people with relatively little education (primary and secondary). Private firms serve those with higher education (tertiary). There is a significant difference in the scores for KCC ( $M = 3.3$ ,  $SD = 0.6$ ) and private sector ( $M = 3.9$ ,  $SD = 0.4$ );  $t(-8.4)$ ,  $P = 0.000$ .

For the estimates of the quantity of waste produced in the household per week in Kg, we found out that there was a significant difference in the scores for KCC ( $M = 3.5$ ,  $SD = 0.7$ ) and private sector ( $M = 3.8$ ,  $SD = 0.4$ );  $t(-5.1)$ ,  $P = 0.000$ . These results suggest that private firms serve those with relatively more garbage than KCC confirming earlier results that private firms serve the rich. Studies show that rich households generate higher quantities of waste than the poor and that income level is a determining factor for domestic solid waste generation rates (Boadi and Kuitunen, 2003; Kaseva and Mbuligwe, 2005).

For house ownership, there was a significant difference in the scores for KCC ( $M = 2.0$ ,  $SD = 0.6$ ) and private sector ( $M = 1.6$ ,  $SD = 0.7$ );  $t(3.3)$ ,  $P = 0.001$ . These results suggest that most clients of private firms live in their own houses unlike clients of KCC who are mainly tenants. House ownership is associated with being rich.

Generally, the results as revealed in the socio-economic characteristics of respondents reveal that private firms target the rich who have the economic means to pay consistently for their services. This is an indication that private firms are more effective in serving the rich. This is not surprising probably as the finding is in line with those of many earlier studies. For instance, according to Spaargaren, Oosterveer, Bureen, and Mol (2005), the pressure for profit maximization forces the private sector to seek rents from serving mainly the highest income areas or fully paid services leaving poor and marginal areas or low income people under the responsibility of under resourced local authorities.

#### Services provision

We compared the responses of private sector and public sector clients in respect to service provision particularly in the provision of containers and frequency of collection of waste from households.

#### Container provision

85% of KCC clients provide their own containers (mostly selfprovision) while most (65%) clients of private firms indicate they receive containers from their service providers. The private sector providing containers can be seen not only in terms of customer care but also to bind the customer to the provider. Many of the containers are well labeled especially bins indicating which firm supplies them to clients. This means that the private sector is more effective in providing services like container provision unlike the public sector especially when public sector (KCC) communal containers (skips) were removed in many neighborhoods in preference for the door-to-door collection system.

**Table 1****Socio-demographic characteristics of respondents.**

Variable	Public sector	Private Sector
	Percentage	Percentage
Income category		
High income	18	67
Medium income	55	30
Low income	27	3
Educational level		
Primary	11	1
Secondary	53	15
Tertiary	36	84
House ownership		
Owner	13	46
Tenant	80	47
Government house	2	4
Caretaker	5	3
Quantity of waste (kg)		
3-5	15	1
6-10	25	16
Above 10	65	83

**Frequency of collection of waste from households**

Respondents were also asked how public and private providers compare in frequency of garbage collection. There was a significant difference in the scores for KCC ( $M = 2.9$ ,  $SD = 1.1$ ) and private sector ( $M = 3.5$ ,  $SD = 0.9$ );  $t (-3.7)$ ,  $P = 0.000$ . These results suggest that there are clear differences on frequency of garbage collection between private firms and KCC. Surprisingly, the majority (51%) served by KCC indicates that waste is collected daily unlike those of private firms (11%) contradicting results of similar studies (Obirih-Opareh & Johan,



2002). Two reasons could explain this difference. First, KCC has a large majority (38%) of customers that are shop keepers as compared to private sector's 22%. The house in which they live works as a shop at the same time and typically is near the road or market places with easy access for KCC vehicles that mainly collect market waste. Second, most low income households, (KCC mainly serves low income households) have no good waste storage containers. This fact coupled with the lack of appropriate in-house storage facilities and the high decomposition rate makes most low income households dispose of waste daily (Boadi and Kuitunen, 2003). The high income households have onsite storage facilities and most contract with waste collectors that have fixed collection time tables. This finding is similar to findings from other related studies (Kaseva and Mbuligwe, 2005; Okot-Okumu and Nyenje, 2011) (Table 2).

Table 2

Frequency of collection of waste from households.

Frequency	Public	Private
	Percentage	Percentage
Daily	51	11
Thrice	14	44
Twice	27	31
Once	6	14
Less frequently	2	0

#### Payments for solid waste collection

All private firm clients pay for solid waste collection unlike for KCC where 76% of the clients pay. This payment pattern is particularly strange since KCC officially does not charge customers. The field interviews, however, indicated that most KCC customers pay and the money end up with KCC solid waste management supervisors and drivers of their vehicles. This finding could be the reason why they pay lower fees ( $M = 22,102$ ,  $SD = 21,824$ ) per month compared to private firm customers ( $M = 31,382$ ,  $SD = 18,709$ ) as the service is already subsidized. Both public (68%) and private (59%) clients consider fees paid to be moderate. When asked about

how often payment to the service providers is done, both public and private customers indicate once a month. However, a large percentage of KCC clients pay weekly unlike those of private firms.

Satisfaction with service provision in this study, satisfaction was used as a proxy for quality of services provided. Customer satisfaction is seen as a key performance indicator in any business and to measure effectiveness of services rendered. Thus it was important to ask Kampala residents to compare and contrast their level of satisfaction with the present situation of SWM. First, the perceptions of both private and KCC clients are compared on SWM problems in the neighborhood as this may have an effect on the general satisfaction of services rendered. There were no significant differences in the scores for KCC and private sector for all three variables tested (solid waste collection, littering of solid waste and nuisance of transfer points).

Results suggest that both public and private firms' customers perceive the problem of solid waste collection, illegal piles of waste to be very serious. In a related question, both KCC and private firms clients indicated mainly personal health and littering of waste as the most urgent problem related to SWM.

#### Satisfaction with the present situation of SWM

As already noted, we asked Kampala residents to compare their level of satisfaction with the present situation of SWM in terms of frequency of garbage collection from their households, vehicles used, frequency of collection from the neighborhood and enforcement of law. In terms of frequency of garbage collection from their households, there was a significant difference in the scores for KCC ( $M = 3.1$ ,  $SD = 1.1$ ) and private sector ( $M = 3.8$ ,  $SD = 0.8$ );  $t (-5.1)$ ,  $P = 0.000$ . These results suggest that clients of private firms are more satisfied than clients of KCC. This tends to confirm the earlier observation that a characteristic of low income people (mostly served by KCC) is to dispose of their waste daily and not necessarily collected by KCC all the time. When not collected by KCC, it is dumped in the illegal sites in the neighborhood and left there to rot and become a nuisance. This observation is in line with the Auditor General (2008) report that faults KCC for irregular solid waste collection in many poor neighborhoods and markets causing pollution and health problems. In terms of satisfaction with the vehicles used, there was no significant differences in the scores for KCC ( $M = 3.0$ ,  $SD = 0.9$ ) and private sector

(M = 3.3, SD = 0.9);  $t (-2.0)$ ,  $P = 0.040$ . These results suggest that clients of both KCC and private sector are not satisfied with the vehicles used. This result is because of the use of uncovered trucks that litter garbage and the use of old vehicles and those unsuitable for waste collections. Clients were also asked about their level of satisfaction with the frequency of garbage collection in their neighborhood. There was a significant difference in the scores for KCC (M = 2.9, SD = 1.2) and private sector (M = 3.7, SD = 1.0);  $t (-5.1)$ ,  $P = 0.000$ . Results suggest that private sector clients are more satisfied than their public sector (KCC) counterparts as regards to frequency of collection in the neighborhood. In terms of satisfaction with enforcement of law to ensure compliance with the solid waste management ordinance, there was no significant difference in the scores for KCC (M = 2.7, SD = 1.1) and private sector (M = 2.2, SD = 1.2);  $t (2.6)$ ,  $P = 0.011$ . These results suggest that clients of both private and public sector

**Table 3**

Satisfaction with service provision.

Satisfaction with service provision	Public %	Private %
Frequency of garbage collection from household		
Poor	29	6
Moderate	31	27
High	40	67
Satisfaction with vehicles used		
Poor	34	20
Moderate	29	37
High	37	43
Frequency of garbage collection in neighborhood		
Poor	40	12
Moderate	27	28
High	33	60
Enforcement of the law		
Poor	40	65
Moderate	35	16
High	25	19

Indicate that issues of enforcement by KCC to ensure compliance with the solid waste ordinance are not taken seriously. They are in agreement that KCC has not done a good job (see Table 3 below for percentage scores). This finding is in line with the Auditor General's report on solid waste management in Kampala. According to the Auditor General (2010), KCC largely failed to establish a solid waste management system to manage garbage collection from 2002 through 2007. The report notes the failure to conduct solid waste management awareness, enforcing the solid waste management by laws like failure to punish those who illegally dump waste, supervising and monitoring the activities of private agents licensed to collect waste and, lastly, ensuring that solid waste is transported properly and conveyed to official dumpsites. In all the variables tested those served by private sector are more satisfied than their counterparts (clients of KCC).

#### Explanations

Data above show that generally private sector services are more appreciated compared to their public sector (KCC) counterparts. In spite of that observation, household data reveals the situation of solid waste management in Kampala is still a great concern. This is backed up by official statistics from KCC that show that service coverage of solid waste collection services is at 40% (KCC, 2006). Interviews with solid waste managers of private firms and KCC managers reveal corruption and lack of transparency as the main reason as to why solid waste collection is not performing effectively despite the public and private sectors being actively involved.

First, senior KCC officials in Kampala were reluctant to embrace fully the agenda of privatization by arguing that outsourcing of solid waste collection service providers was expensive and that local firms did not have the necessary human, technical and financial resources to provide a better service than had been provided by the public sector (Golooba Mutebi, 2003). Some senior KCC officials still hold this view. While this might be true, interviews reveal that KCC officials are also motivated by a desire to continue their benefits from the chaos under a public run SWM, which allows for rent seeking. When solid waste collection was partially contracted out in 2003 (a partnership between KCC and Bisons Consult), the partnership was undermined by KCC with irregular and delayed payments and inaccurate assessments that led to the underpayment for the company's services. The company eventually withdrew from the

contract. While this could be attributed to lack of financial resources by KCC to pay the contractors and lack of capacity in form of monitoring staff having few transportation resources, telephones or mobile communication equipment, most respondents, including KCC officials, attributed this to the 'sabotage' of the new reforms, especially the contracting out method of solid waste collection, in order to create 'rent seeking' opportunities where the officials could benefit. This point is given more credence by the failure of KCC to get out of the business of solid waste collection and transportation, as was planned initially (KCC, 2002). KCC reneged on its promise to contract out service delivery to private firms, and only focus on supervising operations. This is especially so with money continuing to be allocated for solid waste collection.

Second, the activities of waste management are funded through the annual budget allocation and the official policy is that KCC doesn't charge user fees directly from the residents. While this is sometimes adhered to, often times KCC collectors especially 'refuse supervisors' charge residents at lower rates compared to their private collector counterparts. KCC still dominates solid waste collection in certain areas and most surprisingly in neighborhoods with rich settlements. In fact KCC and private firms collide sometimes especially where they work in the same area. Those residents who prefer KCC say its services are cheaper than those of the private companies. This hidden and unfair competition demoralizes private sector service providers developing feelings of uncertainty on their part and holding back for fear and doubt about KCC's intentions.

Third, a number of private garbage collectors such as BINIT, NABUGABO, UPDEAL, NOREMA, HOME CLEAN, and ESKOM are operating without permits from KCC (Auditor General, 2010). Although known to the divisional authorities, they had not signed agreements with the council for allowing them to operate. Despite the absence of the signed contracts, Kawempe division, by June 2007 had an outstanding amount of Shs.225 million (USD 98,597) payable to contractors (Auditor General, 2010). In early 2008, the same companies signed a memorandum of understanding (MOU) with Kawempe division to collect solid waste on very unclear terms. For instance, it was not clear who was to meet the costs of waste collection, how much the private collectors would be paid as a result of the work done, and based on what indicators the

division shall monitor and evaluate the performance. The MOU was agreed upon and signed without making their details available to the council and without the involvement of the solid waste engineer. Lack of transparency in the award of contracts has the potential to demoralize those who could have been willing to invest to improve solid waste management in the city.

Forth, as a result of lack of transparency, there is lack of trust between the major players in the SWM business (public sector, private sector and the general public). The private sector is suspicious of KCC intentions and found KCC unreliable, while on the other hand, the private companies hope to benefit from secrecy, have not been transparent to reveal their incomes and expenditures to KCC, which is one of the reasons given as to why KCC stops paying and subsidizing private contractors. The public (consumers of services), are also not always cooperative especially when it comes to paying for solid waste collection and assisting law enforcers in dealing with those who litter solid waste or who fail to abide by the solid waste laws and regulations. Sometimes, local council leaders have sabotaged enforcement work by the private firms claiming they were not consulted. The relationship between private firms is also not good as cases of unfair competition between rival firms, especially between Nabugabo Enterprises, Global Investments Limited and Bin IT, sometimes end up in physical fights and court cases. The Town Clerk of Kampala sometimes resorts to putting up a public notice warning private garbage collectors and the general public that KCC had no running contract with any private garbage collecting firm and no private collector should claim to have exclusive rights of collecting garbage in any part of the city. Situations like these increase operating and transaction costs because of the uncertainty in the business of solid waste management.

## **Conclusions**

The main objective of the research which underlies in this paper was to compare the operations and discuss the effectiveness of public and private provision of solid waste collection. The case of Kampala, with regard to public and private provision of solid waste collection, reveals that problems and challenges continue over the state of solid waste management as evidenced by the perception that the problem of SWM is still very serious. Yet, in general, results from this study confirm the belief that the private sector is more effective than the public sector. The

results further confirm the suspicion that private sector providers mainly serve the rich. The private sector clients are much more pleased than their public sector counterparts with the services provided. However, the effectiveness of solid waste collection is hampered by corruption and lack of transparency involving both the public and the private sector.

This study generates the much needed data to suggest planning and policy recommendations for Kampala and other cities with similar conditions. Given the situation of competition, it is possible the public sector can operate effectively too if they officially start commercial services. The challenge is how to maintain cost recovery among the poor without leading them to opt out of the services with disastrous consequences for the environment. Tailoring private sector participation to socio-economic circumstances, deepening efforts to promote competition, and introducing mechanisms to ensure that low income households have access to affordable services may be the solution to the problems in providing services in low income countries. This calls for a formal public-private partnership where the public and private sector can work together with the public sector dominating poor and marginalized areas while the private sector dominate rich neighborhoods.

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